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Oceans and the law of the sea

Oceans and the law of the sea

Report of the Secretary-General**

Summary

The present report has been prepared in response to the request of the General Assembly, in paragraph 101 of its resolution 59/24 of 17 November 2004, for the Secretary-General to present at its sixtieth session his annual comprehensive report on developments and issues relating to oceans and the law of the sea. It is also presented to States parties to the United Nations Convention on the Law of the Sea, pursuant to article 319 of the Convention, to be considered by the meeting of States parties under the agenda item: "Report of the Secretary-General under article 319 for information of States Parties on issues of a general nature relevant to States Parties that have arisen with respect to the Convention". It will be presented as a basis for discussion at the sixth meeting of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea and contains information on fisheries and their contribution to sustainable development and marine debris, the areas of focus chosen for the sixth meeting of the Consultative Process, as recommended by the General Assembly. The report also contains information on the status of the Convention and its implementing Agreements, on declarations and statements made by States under articles 287, 298 and 310 of the Convention, and on recent submissions to the Commission on the Limits of the Continental Shelf. The report includes a special section on the Indian Ocean tsunami disaster and a section on capacity-building activities and elaborates on recent developments regarding the safety and security of navigation and protection of the marine environment. Finally, it covers the activities of the Oceans and Coastal Areas Network, a mechanism for inter-agency coordination and cooperation.

* A/60/50.

** Owing to the page limit, this report contains a mere summary of the most important recent developments and selected parts of contributions by major agencies, programmes and bodies.

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Abbreviations

FAO	Food and Agriculture Organization of the United Nations
GEF	Global Environment Facility
GPA	Global Programme of Action for the Protection of the Marine Environment from Land-based Activities
IAEA	International Atomic Energy Agency
ILO	International Labour Organization
IMO	International Maritime Organization
IOC	Intergovernmental Oceanographic Commission of UNESCO
MARPOL	International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto
MEPC	IMO Marine Environment Protection Committee
MSC	IMO Maritime Safety Committee
SOLAS	International Convention for the Safety of Life at Sea
SPREP	South Pacific Regional Environment Programme
STCW Convention	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers
SUA Convention	Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation
SUA Protocol	Protocol for the Suppression of Unlawful Acts against the Safety of Fixed Platforms Located on the Continental Shelf
TSC	TRAIN-SEA-COAST
UNCLOS	United Nations Convention on the Law of the Sea
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
WHO	World Health Organization

I. Introduction

1. The world was appalled by the tragic loss of life caused by the devastating tsunami that struck countries along the rim of the Indian Ocean on 26 December 2004. The earthquake-generated waves caused extensive damage to the environment, destroyed the fishing industries of several countries and severely damaged homes and infrastructure. The present report contains a special chapter on the tsunami and its aftermath. As the tsunami disaster made clear, more scientific research is required in order to understand and to be able to predict ocean-related natural disasters. Indeed, a major theme underlying developments throughout the year is the importance of marine scientific research.

2. The future of the planet and our security depend upon increased understanding of oceans processes and their interaction. Oceans-related issues should be addressed in a comprehensive manner, taking an integrated approach. To fully understand the value of the oceans, it is necessary to undertake worldwide oceanic research to acquire scientific knowledge about the state of the marine environment in its different aspects and phenomena. Improving scientific knowledge and applying it to management and decision-making can make a major contribution to eliminating poverty, ensuring food security, supporting human economic activity, conserving the world's marine environment, predicting and mitigating the effects of and responding to natural events and disasters, and, generally, promoting the use of the oceans and their resources for the objective of sustainable development.

II. The United Nations Convention on the Law of the Sea and its implementing Agreements

A. Status of the Convention and its implementing Agreements

3. As at 31 January 2005, following ratification by Denmark on 16 November 2004, accession by Latvia on 23 December 2004 and ratification by Burkina Faso on 25 January 2005, the number of States parties to the United Nations Convention on the Law of the Sea (UNCLOS or "the Convention"), including the European Community, has risen to 148 (129 coastal States from among the total of 153 and 18 landlocked States from among the total of 42). Burkina Faso, Denmark and Latvia have expressed their consent to be bound by the Agreement relating to the implementation of Part XI. In addition, Botswana acceded to this Agreement on 31 January 2005, bringing the number of parties to 121.

4. Since the issuance of the addendum to the previous report of the Secretary-General (A/59/62/Add.1), there have been no changes in the status of the 1995 United Nations Fish Stocks Agreement. The number of parties to the Agreement remains at 52, including the European Community.

B. Declarations and statements under articles 287, 298 and 310 of the Convention

5. Denmark made a declaration upon ratification of UNCLOS, stating that the exception from the transit passage regime provided for in article 35 (c) of UNCLOS

applies to the specific regime in the Danish straits (the Great Belt, the Little Belt and the Danish part of the Sound), which has developed on the basis of the Copenhagen Treaty of 1857, and that the present legal regime of the Danish straits therefore remains unchanged.

6. Denmark declared that, pursuant to article 287 of UNCLOS, it had chosen the International Court of Justice for the settlement of disputes concerning the interpretation or application of the Convention and that, pursuant to article 298 of UNCLOS, it did not accept an arbitral tribunal constituted in accordance with annex VII for any of the categories of disputes in article 298.

7. Denmark further declared, in accordance with article 310 of UNCLOS, its objection to any declaration or position excluding or amending the legal scope of the provisions of UNCLOS, and stated that "passivity with respect to such declarations or positions shall be interpreted neither as acceptance nor rejection of such declarations or positions".

8. Finally, Denmark recalled that it had transferred competence to the European Community in respect of certain matters governed by UNCLOS and referred to the detailed declaration made by the European Community, upon deposit of its instrument of formal confirmation, on the nature and extent of the transfer of competence. Denmark also stated that the transfer of competence did not extend to the Faroe Islands and Greenland.

III. Maritime space

A. Overview of recent developments regarding State practice, maritime claims and the delimitation of maritime zones

9. *Continental shelf of Trinidad and Tobago.* In October 2004, Trinidad and Tobago informed the Secretary-General that the Parliament of Trinidad and Tobago had enacted the Continental Shelf (Amendment) Act, 1986 (Act No. 23 of 1986), which amended the definition of the continental shelf of Trinidad and Tobago as contained in the Continental Shelf Act, Chapter 1:52 of the Laws of Trinidad and Tobago, in order to bring it into conformity with article 76 of UNCLOS.

10. *Exclusive economic zone of Greenland.* In November 2004, Denmark informed the Secretariat that, as of 1 November 2004, Act No. 411 of 22 May 1996 on the exclusive economic zones would apply to Greenland, as provided by Royal Decree No. 1005 of 15 October 2004. Denmark also stated that Royal Decree No. 1004 of 15 October 2004, on the amendment of the royal decree on delimitation of the territorial waters of Greenland, in force from 1 November 2004, adjusted the baselines from which the territorial sea and the EEZ are measured, in accordance with recent surveys. In pursuance of Decree No. 1005, the Minister for Foreign Affairs of Denmark issued an Executive Order on 20 October 2004 on the exclusive economic zone of Greenland, which provides that "the exclusive economic zone of Greenland shall comprise waters outside and abutting the territorial waters up to a distance of 200 nautical miles from the baselines in force from time to time" and specifies delimitation of that zone in relation to foreign States. Denmark also indicated its intention to deposit the corresponding information in conformity with UNCLOS, upon the entry into force of UNCLOS for Denmark.

11. *Statement of position by Cyprus*. On 30 December 2004, the Secretary-General received a statement of position from the Government of Cyprus with respect to the information note by Turkey concerning the objection of Turkey to the Agreement between the Republic of Cyprus and the Arab Republic of Egypt on the Delimitation of the Exclusive Economic Zone, signed on 17 February 2003 (see A/59/62, para. 32, and A/59/62/Add.1, para. 51). In this statement, Cyprus refuted the arguments put forth by Turkey as "vague and unfounded, both in law and in substance". Cyprus stated, inter alia, that the Agreement on the Delimitation of the Exclusive Economic Zone was signed between the Governments of two sovereign States, one of them being the Republic of Cyprus, and referred in this regard to General Assembly resolution 3212 (XXIX) and Security Council resolutions 541 (1983) and 550 (1984) on Cyprus. Regarding technical aspects of Turkey's objection to the delimitation of the exclusive economic zone between Cyprus and Egypt, the statement of position declared that Cyprus and Egypt had exercised their legitimate sovereign rights to delimit the exclusive economic zone lying between their respective coasts in a distance less than 400 nautical miles and that, when doing so, they had followed strictly the internationally accepted technical methods and specifications. Furthermore, when deciding on the extent of the delimitation line, the two countries had agreed to avoid extending that line into areas where the rights of third coastal States could be affected. The full text of the statement of position has been circulated to States parties to the Convention and will be published in the *Law of the Sea Bulletin*, No. 57.

12. *Adriatic Sea: communications by Slovenia and Croatia*. In a note verbale dated 30 August 2004 addressed to the Secretary-General, Slovenia provided an explanation with reference to a note of Croatia dated 8 July 2004 (see A/59/62/Add.1, paras. 42-44). The full text of the communication from Slovenia was circulated to States parties to UNCLOS and published in the *Law of the Sea Bulletin*, No. 56. On 13 January 2005, the Secretary-General received a communication from Croatia dated 11 January, which contains a response to the note of Slovenia dated 30 August 2004. The communication was circulated to States parties to UNCLOS and will be published in the *Law of the Sea Bulletin*, No. 57.

13. *Exclusive economic zone of Finland*. In a communication dated 11 January 2005, Finland informed the Secretary-General of the entry into force on 1 February 2005 of the Act on the Exclusive Economic Zone of Finland (1058/2004). According to the Act, Finland establishes an exclusive economic zone comprising the part of the sea immediately adjacent to its territorial waters. The outer limits of the zone are determined by the agreements concluded by Finland with other States and the outer limit of the zone is given by a Government decree that also entered into force on 1 February 2005.

B. Deposit and due publicity

14. Between August 2004 and January 2005, several coastal States deposited charts or lists of geographical coordinates of points with the Secretary-General, as required by UNCLOS. On 27 August 2004, Brazil deposited with the Secretary-General, in accordance with article 75, paragraph 2 of UNCLOS, the list of geographical coordinates of points defining the outer limit of the Brazilian Exclusive Economic Zone. On 16 September 2004, China deposited with the Secretary-General, in accordance with article 16, paragraph 2, article 75,

paragraph 2 and article 84, paragraph 2 of UNCLOS, the list of geographical coordinates of points specified in the Agreement between the People's Republic of China and the Socialist Republic of Viet Nam on the Delimitation of the Territorial Sea, the Exclusive Economic Zone and Continental Shelf in Beibu Bay/Gulf of Tonkin, which was signed by the two countries on 25 December 2000, and officially took effect on 30 June 2004. Finally, on 30 November 2004, Viet Nam deposited with the Secretary-General, in accordance with article 16, paragraph 2, article 75, paragraph 2 and article 84, paragraph 2 of the Convention, the same list of geographical coordinates as referred to above.

C. Access to and from the sea and freedom of transit

15. The General Assembly, in its resolution 59/245 on specific actions related to the particular needs and problems of landlocked developing countries, reaffirmed the right of access of landlocked countries to and from the sea and freedom of transit through the territory of transit countries by all means of transport, as set forth in article 125 of UNCLOS. The Assembly stressed the need for the implementation of the São Paulo Consensus adopted at the eleventh session of the United Nations Conference on Trade and Development, held in São Paulo, Brazil, from 13 to 18 June 2004, by the relevant international organizations and donors in a multi-stakeholder approach (see also A/59/62/Add.1, para. 54). It also urged the 2005 high-level event of the General Assembly on the review of the United Nations Millennium Declaration to address the special needs of landlocked developing countries, within a new global framework for transit transport cooperation for landlocked and transit developing countries.

IV. Institutions established by the United Nations Convention on the Law of the Sea

A. International Seabed Authority

16. The International Seabed Authority held its tenth session from 24 May to 4 June 2004. For information on the work of that session and on the commemoration of the Authority's tenth anniversary, see paragraphs 21 to 30 of document A/59/62/Add.1.

17. The Authority held a workshop in Kingston from 6 to 10 September 2004 for the establishment of environmental baselines at deep seafloor cobalt-rich crusts and deep seabed polymetallic sulphides mine sites in the Area for the purpose of evaluating the likely effects of exploration and exploitation on the marine environment. The workshop was organized to assist the Legal and Technical Commission of the Authority in preparing guidelines for use by potential contractors in the establishment of environmental baselines. The Workshop decided to use the recommendations adopted by the Legal and Technical Commission for the guidance of contractors in assessing the possible environmental impacts arising from exploration for polymetallic nodules (ISBA/7/LTC/1/Rev.1) as the basis for the new guidelines, amending them to take account of the specific characteristics of polymetallic sulphides and cobalt crusts. The full report and recommendations of the workshop will be available to the Legal and Technical Commission for

consideration during the Authority's eleventh session, to be held from 15 to 26 August 2005. At that session, the Council of the Authority will begin consideration of the draft regulations for prospecting and exploration for polymetallic sulphides and cobalt crusts prepared by the Legal and Technical Commission.

B. International Tribunal for the Law of the Sea

18. The International Tribunal for the Law of the Sea held its seventeenth session from 22 March to 2 April and its eighteenth session from 20 September to 1 October 2004. The sessions were devoted essentially to legal matters having a bearing on the judicial work of the Tribunal and other administrative and organizational issues. The Tribunal, inter alia, undertook a review of its rules and judicial procedures and prepared budget proposals for 2005-2006.

19. On 14 December 2004, the Tribunal and Germany signed the headquarters agreement. The agreement defines the legal status of the Tribunal in Germany and regulates the relations between the Tribunal and the host country. It will enter into force on the first day of the month following the date of receipt of the last of the notifications by which the Tribunal and Germany inform each other of the completion of their respective formal requirements for the entry into force of the agreement.

20. On 1 September 2004, Horst Köhler, President of the Federal Republic of Germany, visited the Tribunal, accompanied by approximately 140 members of the diplomatic corps accredited to Germany. In commemoration of the tenth anniversary of the entry into force of the Convention, a symposium on maritime delimitation was held at the Tribunal on 25 and 26 September 2004. It was attended by more than 150 participants, including a large number of representatives of States.

21. In 2004, the Korea International Cooperation Agency provided a grant to fund the participation of interns from developing countries in the internship programme of the Tribunal. To date, 11 interns coming from 11 countries have benefited from the grant.

C. Commission on the Limits of the Continental Shelf

22. The Commission on the Limits of the Continental Shelf held its fourteenth session from 30 August to 3 September 2004.[1] The Commission considered, inter alia, the submission made by Brazil;[2] the training manual to assist States in preparing a submission to the Commission; the projected workload of the Commission and its need for appropriate facilities; the consolidation of the rules of procedure; the election of officers; and vacancies in the subcommission established to consider the submission made by the Russian Federation.

Consideration of the submission made by Brazil

23. The head of the Brazilian delegation, Lúcio Franco de Sá Fernandes, Director of Hydrography and Navigation, Ministry of Defence of Brazil, who was accompanied by a delegation of experts, made a presentation of the submission. He provided an overview of its content including the information required by section II,

of annex III to the rules of procedure. Members of the Brazilian delegation answered questions posed by members of the Commission in regard to various technical and scientific issues related to the submission (see CLCS/42, para. 11).

24. The Secretariat informed the Commission that on 30 August 2004, the Legal Counsel of the United Nations had received a letter from the Deputy Permanent Representative of the United States of America to the United Nations, with a request that it be circulated to the members of the Commission and to all Member States. In the letter, the Government of the United States commented on the executive summary of the Brazilian submission, which had been circulated to all Member States, and suggested that the Commission might wish to pay attention to certain issues related to sediment thickness and the Vitoria-Trindade feature.[3]

25. The Commission decided that the Brazilian submission would be examined by way of a subcommission, and appointed the following to serve as its members: Osvaldo Pedro Astiz, Lawrence Folajimi Awosika, Galo Carrera Hurtado, Mladen Juračić, Wenzheng Lu, Yong-Ahn Park and Philip Alexander Symonds. The subcommission elected Mr. Carrera as its chairman and Messrs. Juračić and Symonds as vice-chairmen.

26. The chairman of the subcommission informed the Commission that the subcommission had carried out a preliminary examination of the submission and accompanying data and, in view of their nature, had decided to seek the advice of another member of the Commission, Harald Brekke.

27. The chairman of the subcommission outlined the general timetable for its work, stating that the subcommission had concluded that the examination of the voluminous and complex data received could not be completed during the two-week period allocated following the fourteenth session. Consequently, the subcommission would resume its meetings at the fifteenth session to review the work carried out intersessionally and to prepare a draft of the first working document related to the submission. That meant that two subcommissions would work simultaneously at the fifteenth session, if the Commission decided to examine a new submission by way of a subcommission.

Consequences of the projected workload of the Commission

28. In response to two notes verbales (dated 16 January and 9 July 2004) that the Division for Ocean Affairs and the Law of the Sea of the Office of Legal Affairs circulated to ascertain the timing of potential submissions to the Commission, 13 coastal States have informed the Division of their intention to make submissions before the end of 2009: Nigeria, before August 2005; Ireland, in 2005; Tonga, between January 2005 and December 2006; New Zealand, in 2006; Norway, not before 2006; the United Kingdom of Great Britain and Northern Ireland, before 2007; Namibia and Sri Lanka, in 2007; Uruguay, not before 2007; Pakistan, in 2007 or 2008; and Japan, Myanmar and Guyana, in 2009. Several other States have replied, indicating that the preparation of their submission was under way but that they were not yet in a position to specify a date for its completion.

29. Given the projected workload of the Commission, and the likelihood that multiple subcommissions would be working simultaneously in the future, concerns were expressed with regard to the functioning of the Commission. In response to a letter from the Chairman of the Commission, dated 2 July 2004, the Director of the

Division for Ocean Affairs and the Law of the Sea informed the Commission that steps had already been taken to expand the facilities at the Division designed for the use of the Commission. A second geographical information system laboratory is under construction at the Division; the storage space has been expanded; and the conference room is being enlarged to meet the needs of the Commission. The upgraded facilities should be available in time for the fifteenth session of the Commission, so that two subcommissions will be able to work simultaneously.[4]

Submission made by Australia

30. On 15 November 2004, Australia delivered its submission to the Commission through the Secretary-General. In accordance with rule 50 of the Commission's rules of procedure, the Secretary-General circulated a Continental Shelf Notification, containing the executive summary of that submission, including all charts and coordinates indicating the proposed outer limits of the Australian continental shelf and the relevant territorial sea baselines, to all Member States of the United Nations, including the States parties to the Convention.

31. The United States, the Russian Federation, Japan and Timor-Leste transmitted to the Secretary-General written comments on the executive summary of the Australian submission through notes verbales dated, respectively, 3 and 9 December 2004, 19 January 2005 and 11 February 2005. The United States and the Russian Federation indicated that they did not recognize any claims in relation to territories located in the area covered by the Antarctic Treaty nor any State's rights over the seabed and subsoil of the submarine areas beyond and adjacent to the continent of Antarctica, and that they supported Australia's request to the Commission that it not take any action on the portion of the submission relating to areas of the seabed and subsoil adjacent to Antarctica. Japan made similar comments and stressed that the balance of rights and obligations in the Antarctic Treaty should not be affected. Timor-Leste observed that, in its view, the Australian submission was without prejudice to the question of delimitation of any maritime boundaries between Timor-Leste and Australia and requested that this point be made by the Commission during its examination of the submission.[5]

Programme of work for 2005

32. In 2005, the Commission will hold two sessions: the fifteenth session, from 4 to 22 April, and the sixteenth session, from 29 August to 16 September. The Commission will begin consideration of the Australian submission at the fifteenth session.

Training manual

33. The training manual to assist States in preparing a submission in accordance with article 76 of the Convention, the preparation of which was requested by the Commission (see CLCS/21, para. 21), has been finalized by the Division for Ocean Affairs and the Law of the Sea with the assistance of two members of the Commission (for further details, see para. 47 below).

V. Settlement of disputes: case law summaries

34. UNCLOS provides for four alternative forums for the settlement of disputes: the International Tribunal for the Law of the Sea, the International Court of Justice, an arbitral tribunal constituted in accordance with annex VII to UNCLOS or a special arbitral tribunal constituted in accordance with annex VIII to UNCLOS. States parties may choose one or more of those forums by written declaration made under article 287 of UNCLOS and deposited with the Secretary-General of the United Nations.

35. *International Court of Justice*. Cases still pending before the Court and of relevance to law of the sea matters are: *Territorial and Maritime Dispute (Nicaragua v. Colombia)*; *Maritime Delimitation between Nicaragua and Honduras in the Caribbean Sea (Nicaragua v. Honduras)* and *Case concerning Maritime Delimitation in the Black Sea (Romania v. Ukraine)*. In the only new oceans-related case since the previous report of the Secretary-General, on 16 September 2004, Romania instituted proceedings against Ukraine in a dispute described in its application as "concern[ing] the establishment of a single maritime boundary between the two States in the Black Sea, thereby delimiting the continental shelf and the exclusive economic zones appertaining to them". In its order of 19 November 2004, the Court fixed 19 August 2005 as the time limit for the filing of Romania's memorial and 19 May 2006 as the time limit for the filing of Ukraine's counter-memorial. Information on cases before the International Court of Justice is available on its website at www.icj-cij.org, as well as in its reports to the General Assembly, which contain summaries of cases.

36. *International Tribunal for the Law of the Sea*. On 18 December 2004, the Tribunal delivered its judgment in the case *St. Vincent and the Grenadines v. Guinea-Bissau*, ordering the prompt release of the St. Vincent vessel *Juno Trader* and its crew being detained by Guinea-Bissau. The full text of the judgment is available at the Tribunal's website at www.itlos.org.

37. *Annex VII arbitration*: Case concerning Land Reclamation by Singapore in and around the Straits of Johor (Malaysia v. Singapore). In 2003, the Tribunal considered a request for provisional measures by Malaysia against Singapore in respect of their land reclamation dispute in the Straits of Johor (see A/59/62/Add.1, para. 141). Subsequently, the parties constituted an arbitral tribunal under annex VII to UNCLOS to hear the case on the merits. In early January 2005, Singapore and Malaysia reached a negotiated agreement to settle their dispute on the basis of the recommendations of an independent group of experts appointed by both Governments to study the impact of land reclamation. The parties intend to submit their signed settlement agreement to the arbitral tribunal to form the basis of its award.

VI. Capacity-building

A. Overview

38. The Convention acknowledges the needs of developing States for capacity-building and technical assistance in areas such as marine scientific research, the transfer of technology, activities in the Area and the protection and preservation of

the marine environment. The need for capacity-building has also been emphasized in successive General Assembly resolutions on oceans and the law of the sea. As underscored in paragraph 37.1 of Agenda 21, the programme of action adopted at the United Nations Conference on Environment and Development:[6] "The ability of a country to follow sustainable development paths is determined to a large extent by the capacity of its people and its institutions as well as by its ecological and geographical conditions. Specifically, capacity-building encompasses the country's human, scientific, technological, organizational, institutional and resource capabilities."

39. The term "capacity-building" is often incorrectly used as a synonym of technical assistance. However, capacity-building has characteristics differentiating it from other forms of assistance and cooperation: it focuses on sustainability and on the development of national competencies (see TD/B/WP/155). Capacity-building activities have the direct effect of enabling the beneficiaries to perform and sustain the targeted functions.[7]

40. The Division for Ocean Affairs and the Law of the Sea carries out a diverse range of activities relevant to capacity-building: provision of advisory services; administration of trust funds; organization of briefings and training programmes; preparation of studies, handbooks and publications; maintenance of databases; and dissemination of information through the Internet. To meet the requirements of various international instruments and in the light of the evolution of priorities, the Division is moving from the provision of technical assistance upon request, to proactive initiatives to better equip States to face the challenges of implementing the Convention and deriving benefits from it. The following section provides an overview of both the traditional and the new capacity-building activities carried out by the Division.

B. Specific programmes

1. United Nations Institute for Training and Research

41. From 12 to 14 October 2004, the Division for Ocean Affairs and the Law of the Sea, in conjunction with the United Nations Institute for Training and Research, organized a briefing on developments in ocean affairs and the law of the sea, 10 years after the entry into force of the United Nations Convention on the Law of the Sea. The briefing focused on both overviews and key developments with regard to the Commission on the Limits of the Continental Shelf, the International Seabed Authority and the International Tribunal for the Law of the Sea; navigation; assistance to developing States; maritime zones; marine scientific research; conservation and management of marine living resources; and vulnerable and threatened marine ecosystems and biodiversity. The response of the approximately 60 participants in the briefing was very positive. The next briefing will be held on 4 and 5 October 2005, and will be organized with a view to facilitating the negotiations on the draft resolutions related to the item entitled "Oceans and the law of the sea" on the agenda of the sixtieth session of the General Assembly.

2. Hamilton Shirley Amerasinghe Memorial Fellowship Programme

42. Established in 1981 in memory of Hamilton Shirley Amerasinghe, the first President of the United Nations Conference on the Law of the Sea, the Fellowship

provides participants with in-depth knowledge and additional skills related to ocean affairs and the law of the sea, in order to foster a wider appreciation and application of the Convention and to benefit their countries. Fellows spend six months carrying out supervised research and study at a participating university of their choice, followed by three months of practical training at the Division for Ocean Affairs and the Law of the Sea or at other United Nations entities, depending on their choice of topic. In 2004, the award was given to Milinda Gunetilleke, of Sri Lanka, the nineteenth recipient, who intends to carry out his research on legal issues relating to the continental margin.

43. The General Assembly has repeatedly called upon Member States, interested organizations, foundations and individuals to continue to make voluntary contributions towards the financing of the fellowship. In 2004, contributions to the fellowship fund were received from Monaco, Namibia and Sri Lanka. Information on the Amerasinghe Fellowship may be found on the website of the Division for Ocean Affairs and the Law of the Sea, at www.un.org/Depts/los.

3. United Nations-Nippon Foundation fellowship programme

44. In April 2004, the United Nations and the Nippon Foundation of Japan concluded a technical cooperation agreement to provide capacity-building and human resource development opportunities to developing coastal States, both parties and non-parties to UNCLOS, through a nine-month academic fellowship programme on maritime affairs. This programme is being administered by the Division for Ocean Affairs and the Law of the Sea, with certain support services provided by the Department of Economic and Social Affairs. The fellowship programme is currently being implemented in partnership with 24 academic institutions, international agencies and international organizations in 16 countries.

45. The selection committee, established in accordance with the technical cooperation agreement between the United Nations and the Nippon Foundation, held its first meeting on 6 and 7 December 2004 and selected the first 10 fellows on the basis of their qualifications and in accordance with the relevant provisions of the technical cooperation agreement. They come from the following countries: Bahamas, Bangladesh, Bulgaria, Cambodia, Libyan Arab Jamahiriya, Mauritius, Peru, Philippines, Saint Lucia and Viet Nam. Fellows were selected from nearly 30 candidates nominated by their respective Governments. Invitations for the second round of nominations will be sent in April 2005. Detailed information is available at www.un.org/Depts/los.

4. TRAIN-SEA-COAST programme

46. The TRAIN-SEA-COAST (TSC) programme provides capacity-building at the local and regional levels with an emphasis on (a) building up permanent national capabilities; (b) training targeted to the specific needs of countries; and (c) cost-effectiveness. It is administered by the Division for Ocean Affairs and the Law of the Sea and funded by the Global Environment Facility (GEF) of the United Nations Development Programme (UNDP) through its project GLO/98/G35, expected to end in the first half of 2005. TSC has continued to strengthen its cooperation with other United Nations bodies and programmes (see A/59/62/Add.1, para. 150). In this regard, the TSC course development unit established within the UNEP GPA Coordination Office has added new deliveries of its course on improving wastewater

management in coastal cities, in Bangladesh, Kenya, Maldives, Mozambique, Pakistan, Philippines, Sri Lanka, Turkey and the United Republic of Tanzania. In addition, the TSC/IMO course on ballast water management (see A/58/65/Add.1, para. 135) was delivered at the regional level in Cape Town, South Africa in March 2004 and at the national level in China in June 2004. As an attempt to utilize GEF funding for the new course on submissions to the Commission on the Limits of the Continental Shelf was unsuccessful, the delivery of this course by the Division for Ocean Affairs and the Law of the Sea was funded from other sources (see next section).

5. Training courses to promote compliance with article 76 of the Convention

47. As noted in paragraph 33 above, the Division for Ocean Affairs and the Law of the Sea finalized the training material for its training course for delineation of the outer limits of the continental shelf beyond 200 nautical miles and for preparation of a submission of a coastal State to the Commission on the Limits of the Continental Shelf, based on the outline for a five-day course prepared by the Commission (CLCS/24) in order to facilitate the preparation of submissions in accordance with its scientific and technical guidelines (CLCS/11 and Add.1). The training material consists of a trainer's manual, including a set of slides accompanied by instructions for delivery of the modules, and a trainee's manual that contains nine modules as well as a set of relevant exercises.

48. In cooperation with intergovernmental bodies and host Governments, the Division for Ocean Affairs and the Law of the Sea has begun organizing workshops for developing States, at the regional and subregional levels, using the aforementioned training material. The purpose of the workshops is to train technical staff of wide-continental-margin States intending to establish the outer limits of their continental shelf, with a view to (a) enhancing their knowledge and skills for the preparation of submissions to the Commission on the Limits of the Continental Shelf in conformity with the technical and scientific requirements of article 76 of UNCLOS and in accordance with the guidelines prepared by the Commission; and (b) helping them to develop an in-depth understanding of the full procedure for the preparation of the submission, of the required technical and scientific data, and of how different fields of expertise have to be combined for the purposes of the submission.

49. The first regional workshop was organized by the Division for Ocean Affairs and the Law of the Sea, in cooperation with the South Pacific Applied Geoscience Commission and the Commonwealth secretariat, in Suva, Fiji, from 28 February to 4 March 2005. The workshop was attended by technical personnel of the following developing countries: Fiji, Indonesia, Malaysia, Micronesia, Palau, Papua New Guinea, Philippines, Solomon Islands, Tonga, Vanuatu and Viet Nam. The second regional workshop is tentatively planned to take place in Sri Lanka in May 2005. It is organized for Indian Ocean developing countries by the Division for Ocean Affairs and the Law of the Sea in cooperation with the Government of Sri Lanka. At least three more workshops are planned by the Division in Africa and in Latin America and the Caribbean.

6. Publications

50. At the tenth anniversary of the entry into force of the Convention, the Division for Ocean Affairs and the Law of the Sea and the International Seabed Authority jointly issued a commemorative publication on marine mineral resources. This publication provides an overview of the existing legal framework for marine mineral resources, the scientific aspects of these resources, and the economic and technological perspectives. To provide assistance to States parties in fulfilling all their obligations under UNCLOS, in 2004 the Division also published a compendium of obligations of States parties under the Convention and complementary instruments. The compendium identifies obligations of States under UNCLOS as well as instruments establishing the international standards, rules, regulations, practices and procedures referred to therein.

C. Trust funds[8]

51. *Trust fund for assistance to States participating in the Conference on Maritime Delimitation in the Caribbean.* During the reporting period, there was no activity with regard to this trust fund. As at 31 December 2004, there was $116,773 in the fund.

52. *Trust fund for the purpose of facilitating the preparation of submissions to the commission on the limits of the continental shelf.* This trust fund was established by the General Assembly in its resolution 55/7; its terms of reference were subsequently amended by resolution 58/240. The goal of the fund is to provide assistance to countries, in particular the least developed countries and small island developing States, to enable them to prepare submissions to the Commission. The fund covers the training of technical and administrative staff, desk-top studies and advisory assistance or consultancies. Applications to the fund are considered by the Division for Ocean Affairs and the Law of the Sea with the assistance of an independent panel of experts. In December 2004, the panel of experts recommended and the Division agreed that assistance from the fund be provided for up to two applicants each from Indonesia, Malaysia, the Philippines and Viet Nam, to attend the training course in Fiji described in paragraph 49 above. As at 31 December 2004, there was $1,148,000 in the fund. Norway contributed $1 million in 2000 and Ireland contributed 90,000 euros in three instalments, the last one in 2004.

53. *Trust fund for the purpose of defraying the cost of participation of the members of the Commission on the Limits of the Continental Shelf from developing States.* This trust fund was established pursuant to paragraph 20 of General Assembly resolution 55/7 to enable members of the Commission from developing countries to participate fully in the work of the Commission. As at 31 December 2004, there was $93,500 in the fund. No contributions were made to the fund in 2004. Four members of the Commission received financial support from the fund for the purpose of defraying the cost of their participation in the fourteenth session of the Commission.

54. *Assistance fund under part VII of the 1995 United Nations Fish Stocks Agreement.* The assistance fund became operational in the second half of 2004. Administered by the Food and Agriculture Organization of the United Nations (FAO) in collaboration with the Division for Ocean Affairs and the Law of the Sea, the fund has received $200,000 from the United States of America.

55. *Trust fund to assist States in their settlement of disputes through the International Tribunal for the Law of the Sea.* This fund was established pursuant to General Assembly resolution 55/7; its terms of reference are set out in annex I to resolution 55/7. As at 31 December 2004, there was $69,153 in the fund. No contributions were received in 2004. The first application to the fund was made in 2004 by Guinea-Bissau, which requested financial assistance to defray its expenses in the case of *St. Vincent and the Grenadines v. Guinea-Bissau* for the release of the arrested vessel *Juno Trader* and its crew (see para. 36 above). In January 2005, the Secretary-General approved the recommendation of the panel of experts, established pursuant to the terms of reference of the fund (China, Russian Federation and United Kingdom), to provide financial assistance of $20,000 to Guinea-Bissau in response to its request.

56. *Voluntary trust fund for the purpose of assisting developing countries in attending meetings of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea.* This trust fund was established by General Assembly resolution 55/7. As at 31 December 2004, there was $157,097 in the fund. No contributions were made in 2004. Representatives from the following 11 countries received assistance to attend the fifth meeting of the Consultative Process: Bahamas, Cape Verde, Fiji, Guinea, Madagascar, Marshall Islands, Mozambique, Myanmar, Peru, Samoa and Zimbabwe.

VII. Developments relating to international shipping activities

57. International shipping makes a significant contribution to international trade and the world economy as an efficient, safe and environmentally friendly method of transporting goods around the globe. The primary responsibility for ensuring that ships are safe and adequately manned, the crew adequately trained and provided with decent working conditions, the cargo properly stowed and the ship safely navigated, and that no pollution occurs, rests with the flag State. Articles 94, 211 and 217 of UNCLOS set out the measures a flag State is required to take to fulfil those objectives, although other articles are also relevant. The measures the flag State is required to implement and enforce to ensure safety at sea must conform to the international rules, regulations, standards, procedures and practices contained in instruments developed by international organizations such as IMO and the International Labour Organization (ILO).

A. Ship construction and equipment

58. Comprehensive revisions to the technical regulations of the Protocol of 1988 relating to the International Convention on Load Lines, adopted by the IMO Maritime Safety Committee (MSC) at its seventy-seventh session (resolution MSC.142(77)), entered into force on 1 January 2005. New amendments to annex B to the Protocol were adopted at the seventy-ninth session of MSC (resolution MSC.172(79)). Amendments to the guidelines on the enhanced programme of inspections during surveys of bulk carriers and oil tankers (resolution MSC.144(77)) also entered into force on 1 January 2005.

59. In 2004, contracting parties to the International Convention for the Safety of Life at Sea (SOLAS) adopted amendments to chapters II-1, III, V, VII, XI-1, XII,

and the annex to SOLAS, and to the 1988 Protocol relating to SOLAS (resolutions MSC.170(79) and MSC.171(79)). Chapter XII of SOLAS was amended to introduce restrictions on sailing with any hold empty and new provisions relating to double-side skin construction for new bulk carriers of 150 m in length and over as an alternative to single-side skin construction. The IMO Codes mandatory under SOLAS[9] and a number of non-mandatory Codes[10] were also amended.

60. Other relevant developments during the period under review include the decision of IMO not to restrict its future work on passenger ship safety to large ships;[11] and its development of goal-based new ship construction standards in order to introduce a system whereby the standards would be a measure against which the safety of the ship could be assessed during its design and construction stages, as well as during its operation. In a related, but separate project, the International Association of Classification Societies is developing common structural rules for ships, initially for bulk carriers and tankers.[12]

B. Training of seafarers and fishers and labour conditions

Training

61. MSC adopted amendments to part A of the Seafarers' Training, Certification and Watchkeeping Code by resolution MSC.180(79), which will enter into force on 1 July 2006. The list of parties to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, confirmed by MSC to have communicated information demonstrating that they have given full and complete effect to the relevant provisions of the Convention, as amended (the so-called "white list"), now includes 114 parties.

62. IMO member States have been urged to become parties to the 1995 International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel, in order to bring it into force and enhance training standards for fishing vessel personnel. The new Code of Safety for Fishermen and Fishing Vessels, 2005, which is a revised version of the original Code approved in the 1970s, has been developed for use primarily by competent authorities, training institutions, fishing vessel owners, fishers' representative organizations and non-governmental organizations having a recognized role in fishers' safety and health and training. Part A of the Code provides guidance on the development of national codes and fishers' education and training manuals and guidance on the safety and health of fishers.

Labour conditions

63. The nature of seafaring has made seafarers a politically, legally and economically weak group in society.[13] Increasingly, seafarers have been charged with criminal offences and detained for long periods following a maritime accident, in some cases without wages and without the benefit of due process. The prospect of a prolonged detention acts as a disincentive to those considering joining the profession. The revision and consolidation by ILO of the maritime labour conventions, the revision of the Convention concerning Seafarers' National Identity Documents (see para. 87 below), and the joint work by IMO and ILO on liability and compensation regarding claims for death, personal injury and abandonment of seafarers, and more recently also on the fair treatment of seafarers in the event of a

maritime accident, represent important initiatives in addressing some of the problems facing seafarers.

64. A new consolidated maritime labour convention is being designed by ILO to replace almost all the maritime labour conventions adopted since 1920. It will emphasize compliance and enforcement measures in order to ensure decent working conditions for seafarers and will contain a simplified amendment procedure allowing technical details to be rapidly updated. The new convention is expected to be adopted at the ninety-fourth maritime session of the International Labour Conference in February 2006. In September 2004, the Preparatory Technical Maritime Conference was able to resolve a very large number of difficult and important issues, but did not have time to consider amendments to provisions on which consensus had been reached in the High-Level Tripartite Working Group on Maritime Labour Standards. In order to provide an opportunity to discuss these amendments and the remaining bracketed text, the Governing Body of ILO decided to convene tripartite intersessional meetings from 21 to 27 April 2005.

65. The Preparatory Conference also adopted a resolution in which it urged members (a) to agree among themselves on measures of cooperation which would develop national institutions and capacity for the inspection and certification of maritime labour conditions; (b) to provide training and to exchange knowledge and experience with respect to national policies, laws and regulations and procedures in this area; and (c) to strengthen measures to develop cooperation, the exchange of information and the provision of material assistance at the international, regional and bilateral levels in support of the ratification and implementation of the future convention.[14]

66. Complementing the consolidation of standards for seafarers, ILO is working on the development of a comprehensive standard (a convention supplemented by a recommendation) concerning work in the fishing sector (see A/59/62/Add.1, para. 59). At the ninety-third session of the International Labour Conference, in May 2005, the Committee on the Fishing Sector will consider the text of the proposed instruments, which has already been sent to all member States for comments,[15] a summary of the comments received thereon, the report of the tripartite meeting of experts on the fishing sector held in December 2004, a commentary by the International Labour Office explaining changes made to the text based on the comments received, and the texts of a proposed convention and recommendation on work in the fishing sector.

67. The development of guidelines on the fair treatment of seafarers in the event of a maritime accident was considered in January 2005 at the first session of the joint IMO/ILO working group established for this purpose (see A/59/62/Add.1, para. 61). The concept of "fair treatment" is assumed to include not only a legal right to due process, but other aspects of fairness such as a right to adequate access to provisions to meet basic physical needs and a right to be treated in a non-discriminatory manner (see IMO document IMO/ILO/WGFTS 1/7). Several international instruments, including UNCLOS, in particular articles 292 and 230, contain provisions supporting this objective. The Working Group prepared a draft resolution for adoption by the IMO Assembly and the ILO Governing Body that would stress the concern of the entire maritime industry on the matter, recall the relevant international instruments and urge all States to respect the basic human rights of seafarers, expeditiously investigate maritime accidents to avoid any unfair

treatment, and adopt procedures to allow for the prompt repatriation or re-embarkation of seafarers. The draft resolution will be considered by the Governing Body of ILO in March and by the IMO Legal Committee in April 2005.[16]

C. Transport of goods

68. MSC, at its seventy-ninth session, adopted the Code of Safe Practice for Solid Bulk Cargoes, 2004 (resolution MSC.193(79)) and intends to provide for the mandatory application of some parts of the Code in the future through the adoption of amendments to chapters VI and VII of SOLAS.

69. With respect to the transport of radioactive materials, recent developments include the shipment by the United States of weapons-grade plutonium to France for fabrication into civilian power reactor fuel for test irradiation in the United States.

70. Ships engaged in the carriage of irradiated nuclear fuel, plutonium and high-level radioactive wastes must comply with the International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships. Carriage requirements for highly radioactive cargo (for example, design, fabrication, maintenance of packaging, handling, storage and receipt), which are applicable to all modes of transport, are contained in the International Atomic Energy Agency (IAEA) Regulations for the Safe Transport of Radioactive Material.[17] Missions of the IAEA Transport Safety Appraisal Service help countries to assess and enhance their implementation of the Agency's transport safety standards. In 2004, IAEA published reports on missions to Turkey, Panama and France. A mission to Japan is scheduled for late 2005. Maritime transport of radioactive material is addressed in all missions.

71. The General Assembly in its resolution 59/24, welcomed the adoption by the General Conference of IAEA of resolution GC(48)/RES/10 and the approval by the Board of Governors of IAEA of the Action Plan for the Safety of Transport of Radioactive Material (see A/59/62/Add.1, paras. 64-66). The IAEA International Action Plan for Strengthening the International Preparedness and Response System for Nuclear and Radiological Emergencies was approved by the Board of Governors in June 2004. In its resolution GC(48)/RES/10, as in past years, the IAEA General Conference reaffirmed maritime rights and freedoms, as provided for in international law. It welcomed the practice of some shipping States and operators of providing in a timely manner information and responses to relevant coastal States in advance of shipments for the purpose of addressing concerns regarding safety and security, including emergency preparedness, and invited others to do so in order to improve mutual understanding and confidence regarding shipments of radioactive materials. Shipping States and relevant coastal States were encouraged to continue informal discussions on communication, with IAEA involvement, as recommended by the President of the 2003 International Conference on the Safety of Transport of Radioactive Material (see A/58/65/Add.1, paras. 37-40) and included in the Action Plan.[18]

72. The resolution also stressed the importance of having effective liability mechanisms in place to insure against harm to human health and the environment, as well as actual economic loss due to an accident or incident during the maritime transport of radioactive materials. In order to aid the understanding and authoritative interpretation of the IAEA nuclear liability instruments, an explanatory text has

been developed by the IAEA International Expert Group on Nuclear Liability.[19] Future work of the Group includes an examination of any serious gaps in the regime.

73. In June 2004, Pacific Islands Forum members continued their technical-level dialogue with France, Japan and the United Kingdom on issues related to the shipment of radioactive materials through the Pacific, including prevention, emergency response preparedness and liability and compensation. Forum members were assured that best-practice prevention and response mechanisms are in place and that the regional interest in timely prior notification, information exchange and media coordination is built into planning and procedures. Forum members were also given a full explanation of claims procedures under the revised liability conventions.[20] In August 2004, Forum leaders reiterated their concerns about possible economic loss in a non-release situation and sought assurances from shipping States that, where there is a demonstrable link between the incident and economic loss, Forum countries would not be left to carry such a loss unsupported by the shipping States.[21]

74. In the Mauritius Strategy for the further implementation of the Programme of Action for the Sustainable Development of Small Island Developing States,[22] the international community notes that cessation of transport of radioactive materials through small island developing States' regions is an ultimate desired goal of small island developing States and some other countries, and recognizes the right of freedom of navigation in accordance with international law. States are encouraged to maintain dialogue and consultation, in particular under the aegis of IAEA and IMO, with the aim of improving mutual understanding, confidence-building and enhanced communications in relation to safe maritime transport of radioactive materials. States involved in the transport of such materials are urged to continue to engage in dialogue with small island developing States and other States to address their concerns, including the further development and strengthening, within the appropriate forums, of international regulatory regimes to enhance safety, disclosure, liability, security and compensation in relation to such transport (A/CONF.207/CRP.7, para. 20 quater).

D. Safety of navigation

Hydrographic surveys

75. MSC, at its seventy-eighth session, approved circular 1118 on the implementation of SOLAS regulation V/9 — hydrographic services (IMO document MSC/Circ.1118), in order to remind Governments of their obligations under SOLAS regulation V/9, which entered into force on 1 July 2002 (see A/58/65, para. 71), and to inform them that the International Hydrographic Bureau could assist in examining their needs for developing or improving their hydrographic capabilities.

Ship routeing and reporting measures

76. At its seventy-ninth session, MSC adopted new and amended existing traffic separation schemes, including associated routeing measures, which will take effect on 1 July 2005 (IMO document COLREG.2/Circ.55). The Committee also adopted a new area to be avoided and a mandatory no anchoring area in the West Cameron Area of the Gulf of Mexico and a new area to be avoided in the region of the

Berlengas Islands (Portugal), that will also take effect on 1 July 2005 (IMO document SN/Circ.240).

77. The guidelines and criteria for ship reporting systems were amended by resolution MSC.189(79) to require the use of geographical coordinates in World Geodetic System 1984 (WGS 84) datum or in the same datum as the nautical chart if this chart is based on a datum other than WGS 84 (see IMO document MSC 79/23, annex 31). A similar amendment has been proposed to the General Provisions on Ships' Routeing for adoption by the Assembly of IMO. The Committee also adopted the proposed mandatory ship reporting system in the Western European Particularly Sensitive Sea Area (resolution MSC.190(79)), to take effect on 1 July 2005.

Straits of Malacca and Singapore

78. The IMO Council, at its ninety-third session, held in November 2004, decided that the Organization had played and could play a role in the protection of shipping lanes of strategic importance and significance. It decided that IMO and its Secretary-General should, in cooperation with the littoral States concerned, continue efforts to enhance safety, security and environmental protection in the Strait of Malacca through assisting the littoral States, user States and other stakeholders to take appropriate action to ensure that the Strait remains safe, secure and open to international navigation, including through awareness raising, information-sharing, personnel training, capacity-building and technical cooperation. To that end, IMO and its Secretariat are to seek to promote the marine electronic highway project specifically designed for the Straits of Malacca and Singapore. The GEF/World Bank/IMO marine electronic highway project demonstrates the use of digital technology in navigation to, inter alia, reduce the frequency of ship collisions in the Straits' congested sea lanes and deter bilge water and other ship waste releases. The Council decided to convene an IMO-sponsored meeting in 2005 to consider ways and means to enhance safety, security and environmental protection in the Straits of Malacca and Singapore. Past conferences on navigational safety and the control of pollution in the Straits were convened by IMO and the Institute of Policy Studies, Singapore in 1996 and 1999 (see A/55/61, para. 81).

E. Implementation and enforcement

79. In its resolutions 59/24 and 59/25, the General Assembly recommended actions aimed at strengthening flag States' implementation of their responsibilities under international law. Language similar to that contained in paragraph 38 of resolution 59/24 was included in the Mauritius Strategy (see A/CONF.207/CRP.7, para. 23 (f)). As regards operative paragraph 40 of resolution 59/24, it can be noted that the Joint MSC/IMO Marine Environment Protection Committee (MEPC)/Technical Cooperation Committee Working Group on the Voluntary IMO Member State Audit Scheme has agreed, in principle, that the draft code for the implementation of IMO instruments[23] should be the basis for the audit standard; that further work was needed to ensure that the code met the requirements of the audit standard; and that the draft code should be evaluated against the draft audit. The IMO Council acknowledged at its twenty-second extraordinary session that the obligations and responsibilities of member States should be auditable in accordance with the code.

80. With respect to the issue of the genuine link, the IMO Council, at its ninety-third session, noted that the Secretary-General of IMO had consulted the executive heads of other competent international organizations on how best to implement the invitation made by the General Assembly in its resolutions 58/240 and 58/14. It agreed that an inter-agency meeting should be convened by the Secretary-General of IMO and requested him to report on its outcome at the next session of the Council for consideration and action as appropriate, before a relevant submission is conveyed to the United Nations for consideration by the General Assembly at its sixty-first session in 2006 (IMO document C 93/D, para. 17 (a)). The inter-agency meeting will take place on 7 and 8 July 2005.

81. MSC, at its seventy-ninth session, approved a joint MSC/MEPC circular on transfer of ships between States, providing a procedure whereby the transfer of ships between flag States should be conducted so that the "gaining" flag State could seek safety-related information from the "losing" flag State.

F. Jurisdictional immunities

82. Article 16 of the United Nations Convention on Jurisdictional Immunities of States and Their Property, adopted by the General Assembly by its resolution 59/38, restates the principle in UNCLOS that ships owned or operated by a State and used, for the time being, only on government non-commercial service, have sovereign immunity. According to article 16, State immunity is also maintained in respect of any cargo on board a ship owned or operated by a State, as well as any cargo belonging to a State and used or intended for use exclusively for government non-commercial purposes. However, if a State owns or operates a ship which, at the time the cause of action arose, was used for other than government non-commercial purposes, it cannot invoke immunity from jurisdiction before a court of another State that is otherwise competent in a proceeding which relates to the operation of the ship or to the carriage of cargo on board the ship. In such case, irrespective of the type of proceeding, whether *in rem* or *in personam*, States may plead all measures of defence, prescription and limitation of liability which are available to private ships and cargoes and their owners. If required, the Government and non-commercial character of the ship or cargo, may be proven by a certificate signed by a diplomatic representative or other competent authority of the State.

VIII. Maritime security and crimes at sea

83. Most of the major threats to international peace and security identified in the report of the High-level Panel on Threats, Challenges and Change (A/59/565) have a maritime component. For example, resource security, food security and human health can be threatened by over-exploitation of living marine resources and degradation of the marine environment. Competing demands over dwindling resources can lead to inter-State conflict. Ships can be used for illicit purposes, for example, to transport nuclear, radiological, chemical and biological weapons or small arms and light weapons. They can also be the object of a terrorist attack or used for terrorist purposes. Transnational organized criminals misuse maritime transport for illicit traffic in narcotic drugs and psychotropic substances, smuggling of migrants and other criminal activities. Recent actions taken by the international

community to prevent and suppress acts of terrorism against shipping and illicit traffic in weapons of mass destruction, their means of delivery and related materials, as well as piracy and armed robbery at sea, smuggling of migrants and illicit traffic in narcotic drugs and psychotropic substances are set out below.

A. Maritime security

International Ship and Port Facility Security Code

84. In its resolution 59/24, the General Assembly welcomed the entry into force of the International Ship and Port Facility Security Code and related amendments to SOLAS on 1 July 2004, and encouraged States to ratify or accede to international agreements addressing the security of navigation and to adopt the necessary measures, consistent with UNCLOS, to implement and enforce the rules contained in those agreements. Data gathered by the IMO secretariat and the port and shipping industries shows that compliance with the Code is now close to 100 per cent, as compared to some 86 per cent of ships and 69 per cent of port facilities immediately prior to its entry into force. Reports on control and compliance measures taken against ships in the aftermath of the entry into force of the Code are relatively small in number. However, there is concern over information that some Governments and port authorities in certain regions have not yet taken all of the actions necessary to implement the Code fully in their port facilities. It has also been suggested that the security regime needs further improvement.[24]

85. In order to facilitate the consistent, uniform and harmonized implementation of the security measures in SOLAS and the Code, in 2004 MSC adopted interim guidance on control and compliance measures to enhance maritime security (resolution MSC.159(78)) and also approved a number of circulars,[25] including guidance to masters, companies and duly authorized officers on the requirements relating to the submission of security-related information prior to the entry of a ship into port (MSC/Circ.1130). The latter circular includes a standardized data-set of security-related information that ships could be expected to provide in advance of their arrival in port. It recommends that unless a coastal State has established a different time period for the submission of the required information prior to the expected entry of the ship into port, the default minimum period should be not less than 24 hours. Australia has announced its proposal to establish a maritime identification system up to 1,000 nautical miles from the coast, based on cooperative international arrangements, including with neighbouring countries, in accordance with international and domestic law, to be implemented during 2005. Australia will require ships intending to call at its ports to provide advance arrival information up to 1,000 nautical miles from its coast. Ships intending to come within 200 nautical miles of the coast will be asked to provide information on a voluntary basis up to 500 nautical miles from the coast. Some neighbouring States were reported to have raised concerns regarding the proposed establishment of what has been perceived as a new maritime zone.[26]

86. Other actions taken by IMO to assist States in the implementation of the amendments to SOLAS and the International Ship and Port Facility Security Code include technical assistance activities in the two global programmes under the IMO Integrated Technical Cooperation Programme. The global programme on maritime and port security will now focus on specific operational measures that need to be

taken to safeguard the security of passengers and crews; and a "train-the-trainer" programme will help Governments to strengthen their maritime security implementation through the provision of trained instructors capable of delivering quality training using the relevant IMO model courses.

87. IMO has underlined the need for a proper balance between the needs of security, the requirement to maintain the safety and working efficiency of the ship, and the protection of the human rights of seafarers and port workers (see IMO document MSC/Circ.1112). The ILO Seafarers' Identity Documents Convention (Revised), 2003 (No. 185), which entered into force on 9 February 2005, is expected to strengthen international port security while also facilitating the transit, transfer and shore leave of seafarers in the normal conduct of their profession. The Convention requires the issuance of a new seafarers' identity document. Its biometric feature, the fingerprint, is based upon "global interoperability", so that it is possible for the fingerprint information on the identity document issued in one country to be read correctly by equipment used in another. To enable this, the ILO Governing Board adopted in March 2004 a single standard (ILO SID-0002, Finger minutiae-based biometric profile for seafarers' identity documents, with specifications to be followed in national systems and products for generating the biometric representation of fingerprints on the identity document, and for verifying that the seafarer's fingerprint corresponds to the fingerprint on the identity document. ILO has since tested products from potential suppliers and, as at 15 January 2005, had identified two products that meet the requirements of Convention No. 185 and the ILO SID-0002 standards.

Revision of the SUA Convention

88. The Legal Committee of IMO and its working group on the revision of the Convention for the Suppressing of Unlawful Acts against the Safety of Maritime Navigation (SUA Convention) and the Protocol for the Suppression of Unlawful Acts against the Safety of Fixed Platforms Located on the Continental Shelf (SUA Protocol) have continued their consideration of the draft protocol to the SUA Convention, focusing primarily on the non-proliferation offences and the boarding provisions.[27] The terrorist offence provisions have received general support. The Committee decided to expand the definition of "death or serious injury or damage" to include substantial damage to the environment. The working group agreed to include a general reference to UNCLOS in the preamble.

89. At its meeting early in 2005, the working group reached agreement on the inclusion of a definition of transport for the purposes of the Convention. A substantial majority in the working group agreed on the wording of the offence consisting of the transport of nuclear materials and the offence for the transport of dual use equipment, materials or software or related technology (see IMO document LEG/SUA/WG.2/4).

90. New boarding provisions have been included in the draft protocol which: (a) require express flag State authorization before a boarding may take place; (b) require the requesting party to consider warning other States if a flag State does not comply with its obligation to respond to a request; (c) require States to take into account the dangers and difficulties involved in boarding a ship at sea and searching its cargo and to consider whether other appropriate measures agreed between the States concerned could be more safely taken in the next port of call or elsewhere;

and (d) specify that the flag State may consent to the exercise of jurisdiction by another State having concurrent jurisdiction. It was agreed that any use of force during boarding must not exceed the minimum degree of force necessary and reasonable in the circumstances and to include provisions concerning compensation for unjustified boarding or if the measures are unlawful or exceed that reasonably required. The authorization to board by a flag State will not per se entail its liability. It was furthermore agreed that it was not necessary to exclude specific offences from the boarding provisions, since the flag State's consent already determined which offences would trigger boarding provisions.

91. The working group also reviewed the proposed amendments to the Protocol for the Suppression of Unlawful Acts against the Safety of Fixed Platforms Located on the Continental Shelf (SUA Protocol) (see LEG/SUA/WG.2/4, paras. 93-104) and agreed that some provisions of the draft protocol to the SUA Convention would also apply mutatis mutandis to the offences in the SUA Protocol. The IMO Legal Committee will devote one week of its two-week session in April 2005 to consideration of the draft protocols to the SUA Convention and the SUA Protocol. A diplomatic conference is scheduled to adopt the draft protocols in October 2005.

92. The High-level Panel on Threats, Challenges and Change has recommended that ongoing negotiations at IMO to amend the SUA Convention should be completed in a timely manner in order to reinforce international legal provisions against illicit trafficking of nuclear, biological and chemical weapons and materials. The Panel states in its report (A/59/565) that if progress in the negotiations is not satisfactory, the Security Council may need to be prepared to consider mandatory action. The Panel also recommends that all States be encouraged to join the Proliferation Security Initiative (described in A/59/62, para. 162).

93. Pursuant to the Statement of Interdiction Principles adopted by States participating in the Proliferation Security Initiative, the United States and the United Kingdom are pursuing cooperation in the prevention of the flow of weapons of mass destruction, their delivery systems, and related materials to and from States and non-State actors of proliferation concern on a bilateral basis by concluding boarding agreements with individual flag States.

B. Piracy and armed robbery against ships

94. Whether an attack can be qualified as an act of piracy or armed robbery depends on the location and the nature of the offence. Piracy is defined in article 101 of UNCLOS and armed robbery in the IMO Code of Practice for the Investigation of the Crimes of Piracy and Armed Robbery against Ships.

95. The International Maritime Bureau of the International Chamber of Commerce received reports of 325 actual and attempted acts of piracy and armed robbery during 2004.[28] The number of incidents of piracy and armed robbery against ships reported to IMO during the first nine months of 2004 was 252. While this figure represents a decrease of 28 per cent compared with the corresponding period in 2003, the level of violence has escalated. During the period, 30 crew members and passengers were reportedly killed, 94 were injured and 113 were taken hostage. The areas most affected by acts of piracy and armed robbery against ships were the Far East, in particular the South China Sea and the Malacca Strait; South America and the Caribbean; the Indian Ocean; and West and East Africa. Most of the attacks

worldwide were reported to have occurred or been attempted in territorial seas while ships were at anchor or berthed.

96. Seafarers consider that the international community and the international shipping industry have failed to provide effective responses to the growing threats posed by piracy and armed robbery attacks on merchant ships. They believe that the absence of any concerted and coordinated international action to tackle the problem means that merchant shipping is becoming an increasingly attractive target not only to traditional "pirates" and armed robbers, but also to terrorists. They consider it essential for the international community to urgently demonstrate a "zero tolerance" approach to piracy and armed attacks on shipping.[29]

97. MSC, at its seventy-ninth session (see IMO document MSC 79/23, sect. 16), urged all Governments and the industry to intensify and coordinate their efforts to eradicate these unlawful acts. Governments were urged to provide information to IMO on the action they took with regard to incidents reported to have occurred in their territorial waters. The Committee furthermore noted the activities of the IMO secretariat in conducting workshops and seminars on combating piracy and armed robbery; the plan to hold a regional seminar on piracy and armed robbery against ships and maritime security in Yemen in March or April 2005; and the actions taken pursuant to the Secretary-General's initiative on the protection of vital shipping lanes (see para. 78 above).

98. General Assembly resolution 59/24 underlined the need for States to give urgent attention to the promotion, adoption and implementation of cooperation agreements, in particular at the regional level in high-risk areas. The Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia, adopted on 11 November 2004 in Tokyo, is expected to strengthen regional cooperation in preventing and combating piracy and armed robbery against ships in Asia.[30] It will establish a network of cooperation and information sharing among the maritime safety and coastguard institutions of 16 Asian States. Singapore will host an information-sharing centre to collect, analyse and prepare reports on information transmitted by the contracting parties concerning piracy and armed robbery against ships, including other relevant information, if any, relating to individuals and transnational organized criminal groups committing such acts. The reports will be disseminated to the parties, the shipping community and IMO. The centre will also alert contracting parties if there is a reasonable ground to believe that a threat of an incident of piracy or armed robbery against ships is imminent.

C. Illicit traffic in narcotic drugs and psychotropic substances

99. It is estimated that criminal organizations gain $300 billion to $500 billion annually from illicit traffic in narcotic drugs and psychotropic substances (A/59/565, para. 166). Many drugs are transported illicitly by sea. Containers facilitate the trafficking of large quantities of heroin and cocaine. For example, in 1999, 64 per cent of the global seizure volume of cocaine reported to the World Customs Organization was intercepted in maritime containers. In response to the projected doubling of the container trade by 2012, the United Nations Office on Drugs and Crime has launched a Container Control Pilot Programme in partnership with the World Customs Organization to support port State control measures in developing countries by providing them with training and equipment to target illicit

trafficking via maritime freight containers. Activities will start with the ports of Guayaquil (Ecuador) and Dakar.[11]

100. Article 108 of UNCLOS and article 17 of the 1988 United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances provide the legal framework for cooperation among States in the suppression and combating of illicit traffic of narcotic drugs and psychotropic substances by sea. In order to further enhance cooperation, the United Nations Office on Drugs and Crime has issued two guides: a maritime drug law enforcement training guide and a practical guide for competent national authorities under article 17 of the 1988 Convention. However, as noted by the Executive Director of the Office in his third biennial report on the world drug problem (see E/CN.7/2005/2/Add.3, sect. VII), much remains to be done in the area of combating illicit traffic in drugs by sea, as only a few States reported that they were using the available tools. Since the twentieth special session of the General Assembly in 1998, 43 States reported that they had reviewed, simplified or otherwise strengthened procedures for executing requests in connection with countering illicit traffic by sea. From June 2002 to June 2004, only a few States reported that they had received, sent or executed requests for assistance in relation to illicit traffic by sea. Some States reported that statistics were not available. Difficulties encountered included staff limitations and the time-consuming nature of the requests, lack of resources, requests received from an unrecognized competent authority, lack of reliable information and failure by requesting Governments to verify information.

101. In October 2004, the Government of Japan, in cooperation with the United Nations Office on Drugs and Crime, hosted a maritime drug law enforcement seminar for enforcement agencies from nine countries of the Asian region (Cambodia, China, Indonesia, Japan, Malaysia, Republic of Korea, Thailand, Philippines, Viet Nam) to further international cooperation in combating illicit drug trafficking by sea through training on the Office's practical guide for competent national authorities. In addition, the Japanese coastguard demonstrated a secure, fast e-mail system that enables the exchange of information on suspect vessels, including photographs of such vessels. The authorities in Japan and China tested the system between them and found it to be very efficient and inexpensive. The Japanese coastguard offered to make the system available to other law enforcement agencies in the region.

102. IMO has decided to revise its guidelines for the prevention and suppression of the smuggling of drugs, psychotropic substances and precursor chemicals on ships engaged in international maritime traffic (contained in IMO Assembly resolution A.872(20)) on an urgent basis in order to align them with the International Ship and Port Facility Security Code. A considerable number of aspects addressed in the IMO guidelines relating to security matters are now dealt with in the Code. However, it has been emphasized that security measures should not inhibit interdiction activities and that the maintenance of the security measures and procedures in place on board a ship have to be appropriately balanced with the need to allow searches of a ship for illicit drugs, psychotropic substances and precursor chemicals. The IMO Facilitation Committee intends to submit draft amendments to the guidelines to the twenty-fourth session of the IMO Assembly for adoption in late 2005.

D. Smuggling of migrants

103. The total number of incidents related to unsafe practices associated with the trafficking or transport of migrants by sea reported to IMO from 1999 to 30 July 2004 was 597, involving 20,175 migrants (IMO document MSC.3/Circ.7). But the actual number of incidents is estimated to be much higher. General Assembly resolution 59/24 welcomed the entry into force of the Protocol against the Smuggling of Migrants by Land, Air and Sea and the Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children, supplementing the United Nations Convention against Transnational Organized Crime. As of 4 February 2005, 67 States had become parties to the smuggling protocol and 79 to the trafficking protocol. In order to assist States in the ratification and implementation process, the United Nations Office on Drugs and Crime has developed and published legislative guides for the implementation of the Convention against Transnational Organized Crime and its protocols. The Conference of the Parties to the Convention, at its second session, in October 2005, will consider, among other matters, difficulties encountered by States parties in the implementation of the smuggling protocol and technical assistance possibilities.

IX. The marine environment, marine resources and sustainable development

A. Protection and preservation of the marine environment

1. Pollution from land-based activities

104. Marine pollution from land-based activities has significant negative implications of global magnitude for human health, poverty alleviation, food security and safety, and for affected industries. It amounts to about 80 per cent of marine pollution. While sewage remains the largest source of contamination, other serious land-based threats include persistent organic pollutants, many of which are transported globally via the atmosphere, non-biodegradable litter, and changes to natural sediment loads in rivers. Groundwater, storm water, rivers, sewage systems and the wind all transfer terrestrially derived pollutants to the oceans, where the pollutants accumulate in both biological and geophysical resources, thus reducing the economic, social and environmental value of coastal and oceanic systems.[32]

(a) Legal and policy framework

105. UNCLOS, in articles 194, 207 and 213, provides the legal framework for States to protect the marine environment from land-based pollution. This framework is complemented by the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA),[33] which provides guidance to national and regional authorities for devising and implementing sustained action to prevent, reduce and control or eliminate marine degradation from land-based activities. GPA addresses the impacts of land-based activities on the marine and coastal environment, including contaminants, physical alteration, point and non-point sources of pollution and such areas of concern as critical habitats, habitats of endangered species and protection of ecosystem components such as breeding and feeding grounds. It is the only global programme addressing the interface between

freshwater and saltwater environments. In 2001, GPA underwent its first intergovernmental review, during which the Montreal Declaration (E/CN.17/2002/PC.2/15, annex, sect. I) and a programme of work for the GPA Coordination Office of UNEP were adopted. The second intergovernmental review meeting will be held in 2006. In preparation, UNEP has initiated a process of consulting a cross section of stakeholders on organizational matters and possible themes.

106. Issues relating to pollution from land-based activities were discussed, in particular, at the first meeting of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea in 2000. The General Assembly, at its fifty-fifth and subsequent sessions, has stressed the importance of ensuring full implementation of GPA, calling upon States to prioritize action on marine pollution from land-based activities. The Johannesburg Plan of Implementation[34] adopted at the World Summit on Sustainable Development called on Governments to advance implementation of GPA and the Montreal Declaration, with particular emphasis, during the period from 2002 to 2006, on municipal waste water, the physical alteration and destruction of habitats, and nutrients.

(b) Municipal waste water management

107. Municipal waste-water discharges are considered one of the most significant threats to coastal environments worldwide. Associated effects include the spreading of pathogens, suspended solids, nutrients, plastics and other debris, and toxic substances like heavy metals and persistent organic pollutants in cases where industrial effluents are mixed with municipal waste water.[35]

108. The importance of addressing the environmental aspects of the Johannesburg Plan of Implementation targets on water and sanitation was reiterated in the Jeju Initiative,[36] which noted that an ecosystem approach to sanitation should incorporate the demands and effects of sanitation services on water catchments, downstream countries and communities and the coastal environment. Issues relating to water, sanitation and human settlements were addressed by the twenty-third session of the UNEP Governing Council, held in Nairobi from 21 to 25 February 2005, which considered the "Ten Keys for Local and National Action on Municipal Wastewater Management" developed by the GPA Coordination Office in the context of the Strategic Action Plan on Municipal Wastewater.[37] The Ten Keys were already recommended as best practice principles in the Jeju Initiative. Water, sanitation and human settlements are also the focus of the 2004-2005 cycle of the Commission on Sustainable Development.

(c) Nutrients

109. Eutrophication can result from the augmentation of nutrient inputs to coastal and marine areas as a consequence of human activities. Usually, eutrophication is confined to the vicinity of coastal discharges but, because of both the multiplicity of such discharges and regional atmospheric transport of nutrients, the affected area can be extensive. The effects of the enhanced mobilization of nutrients are enhanced productivity, as well as changes in species diversity, excessive algal growth, dissolved oxygen reductions and associated fish kills and, it is suspected, the increased prevalence or frequency of toxic algal blooms. The GPA Coordinating Office is identifying marine areas where nutrient inputs are causing or are likely to cause pollution, directly or indirectly. The goal is to reduce nutrient inputs into the

areas identified; to reduce the number of marine areas where eutrophication is evident; and to protect and, where appropriate, to restore areas of natural denitrification.[38]

(d) Physical alterations and destruction of habitats

110. The increase of population and economic activities in coastal areas is leading to an expansion of construction, which in turn leads to alterations to coastal ecosystems, including of coral reefs, coastlines, beachfronts, and the sea floor. Affected ecosystems include spawning grounds, nurseries and feeding grounds for already depleted fish stocks of crucial importance to world food security. Their destruction is an increasing threat to the food security of coastal populations, in particular in developing countries. In the framework of its project on physical alterations destruction of habitats programme, the GPA Coordination Office has developed sectoral key principles and checklists for improving existing institutional and legal frameworks. The economic sectors identified as having the most significant impact on physical alterations and destruction of habitats are tourism, aquaculture, mining and ports and harbours.[39]

111. Other problems identified by the Coordination Office include pollution by persistent organic pollutants, radioactive substances, heavy metals, oils (hydrocarbons), litter and sediment mobilization.

(e) Activities at the national level

112. As the primary responsibility to implement GPA rests with national Governments, the GPA Coordination Office, with the support of donors, takes an active role in the development and implementation of national programmes of action for the protection of the marine environment from land-based activities. A target of 40 national programmes of action by 2006 was set in the framework for action on water and sanitation tabled at the World Summit on Sustainable Development. This target will likely be exceeded. The GPA Coordination Office, in partnership with national Governments and institutions, as well as with relevant GEF projects, has launched a project aimed at developing guidance on legislative provisions to support the implementation of national programmes of action.

(f) Activities at the regional level

113. Cooperation with the UNEP Regional Seas Programme provides an important platform for regional implementation of GPA. In collaboration with the Programme, the GPA Coordination Office conducted an inventory of regional-specific data on water supply, sanitation and waste-water treatment coverage in the UNEP regional seas. The GPA Coordination Office has also explored the possible use of regional waste-water emission targets,[40] as discussed extensively during the Global H_2O: Hilltops-2-Oceans Partnership Conference, held in Cairns, Australia, from 10 to 14 May 2004 (see A/59/62/Add.1, paras. 102 and 103).

(g) Conclusions

114. The primary responsibility to reduce marine degradation from land-based activities rests with individual States. Regional cooperation is of great importance in achieving this goal. GPA is a very important guide to action and should be implemented at all levels. The work of the GPA Coordination Office in this regard

should be supported and enhanced. In the development of national, regional and international policies, freshwater and saltwater issues should be considered jointly and the connection to the health and productivity of coastal and marine waters must be taken into account. Global efforts to implement the Johannesburg Plan of Implementation, the internationally agreed goals contained in the United Nations Millennium Declaration and the Monterrey Consensus on Financing for Development should emphasize the link between freshwater, the coastal zone and marine resources.

2. Pollution from ships

115. Although shipping is responsible for a comparatively small percentage of the pollution entering the world's oceans, pollution incidents generally receive a lot of publicity and are met with increasing public intolerance. However, threats to the marine environment from shipping can arise not only from polluting accidents, but also from operational discharges; physical damage to marine habitats; the use of toxic anti-fouling paints on ships' hulls; ballast water discharge; and intense underwater anthropogenic noise. UNCLOS regulates pollution from ships by requiring States, acting through the competent international organization or general diplomatic conference, to establish international rules and standards to prevent, reduce and control pollution of the marine environment from vessels, and to re-examine these from time to time as necessary. Apart from the IMO safety-related conventions, which are vital for the prevention of accidents, the international rules and standards for the prevention and control of pollution from vessels are mainly contained in MARPOL and its six annexes, which regulate the discharge of oil (annex I), noxious liquid substances (annex II), harmful substances carried by sea in packaged form (annex III); sewage (annex IV); garbage or marine debris (annex V; see also paras. 254-256 below) and air pollution (annex VI). The use of harmful anti-fouling systems is regulated by the International Convention on the Control of Harmful Anti-Fouling Systems on Ships, which is not yet in force. The need to bring this Convention into force was underlined by MEPC at its fifty-second session (see IMO documents MEPC 52/15 and MEPC 52/24, sect. 15) and by the General Assembly in its resolution 59/24. Developments relating to ballast water discharge and anthropogenic noise pollution are reported in paragraphs 131 and 157 of the present report.

(a) Developments relating to annex I to MARPOL

116. A revised version of annex I to MARPOL, containing regulations for the prevention of pollution by oil, was adopted by MEPC in 2004 (resolution MEPC.117(52)) and under the tacit amendment procedure is expected to enter into force on 1 January 2007. It incorporates in a user-friendly and simplified annex the various amendments adopted since MARPOL entered into force in 1983, including the amended regulations on the phasing-in of double hull requirements for oil tankers. It separates the construction and equipment provisions from the operational requirements and makes clear the distinctions between the requirements for new and existing ships.

117. The revised annex I includes new requirements relating to the provision of double bottoms for the pump rooms of oil tankers (regulation 22), and relating to the construction of oil tankers delivered on or after 1 January 2010 so as to provide adequate protection against oil pollution in the event of stranding or collision

(regulation 23). MEPC adopted a resolution giving explanatory notes on matters related to the accidental oil outflow performance required under regulation 23. It approved unified interpretations to the revised annex I and a circular containing cross-reference lists between the "old" and "new" regulations, intended to facilitate familiarization with the new numbering system of the revised annex I. Guidelines for the application of the revised annex I requirements to floating production, storage and offloading units and floating storage units are expected to be finalized for adoption by MEPC in 2005 (see IMO document MEPC.52/24).

(b) Developments relating to annex II

118. The revised annex II, containing regulations for the control of pollution by noxious liquid substances in bulk, was also adopted by MEPC in 2004 (resolution MEPC.118(52)) and is expected to enter into force on 1 January 2007. It includes a new four-category classification system for noxious and liquid substances determined according to the level of harm caused to either marine resources or human health as a result of the discharge of such substances into the marine environment from tank cleaning or de-ballasting operations. If the discharge presents a major hazard, then the substances fall within category X and justify a prohibition of the discharge into the sea. If the discharge is deemed to present a hazard to either marine resources or human health or cause harm to amenities or other legitimate uses of the sea, then the substances fall within category Y and justify a limitation on the quality and quantity of the discharge into the sea. If the discharge is deemed to present a minor hazard to either marine resources or human health, then the substances fall within category Z and less stringent restrictions on the quality and quantity of the discharge into the sea are justified. Substances that are evaluated and found to fall outside categories X, Y or Z, because they are considered to present no harm to marine resources, human health, amenities or other legitimate uses of the sea when discharged into the sea from tank cleaning or de-ballasting operations, are categorized as other substances. The discharge of bilge, ballast water, or other residues or mixtures containing these substances is not subject to any requirements of annex II.

119. The revised annex incorporates improvements in ship technology, such as efficient stripping techniques, that have made possible significantly lower permitted discharge levels for certain products. Thus, for ships constructed on or after 1 January 2007, the maximum permitted residue in the tank and its associated piping after discharge will be set at 75 litres for products in categories X, Y and Z, as compared with previous limits of 100 or 300 litres, depending on the product category.

120. In order to revise annex II, the marine pollution hazards of thousands of chemicals were evaluated by the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection. The Group's hazard profile indexes the substance according to its bioaccumulation, biodegradation, acute toxicity, chronic toxicity, long-term health effects and effects on marine wildlife and benthic habitats. As a result of this hazard evaluation process and the new categorization system, vegetable oils previously categorized as unrestricted are now required to be carried in chemical tankers. The revised annex permits the exemption of ships certified to carry individually identified vegetable oils, subject to certain provisions relating to the location of the cargo tanks carrying the oil. MEPC also developed guidelines to

allow general dry cargo ships that are currently certified to carry vegetable oil in bulk to continue to carry these vegetable oils on specific trades.[41]

121. The Committee adopted consequential amendments to the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk reflecting the changes to MARPOL annex II. The amendments include revisions to the categorization of certain products relating to their properties as potential marine pollutants, as well as revisions to ship type and carriage requirements.

(c) MARPOL Special Areas

122. The Committee adopted stricter controls on discharge of oily wastes for the Oman Sea area of the Arabian Sea as a result of its designation as a MARPOL Special Area under annex I. The designation is included in the revised annex I.

(d) Reception facilities

123. In recognition of the fact that the provision of reception facilities is crucial for effective MARPOL implementation, in particular in Special Areas, MEPC at its fifty-second session strongly encouraged member States, particularly port States that are parties to MARPOL, to fulfil their treaty obligations relating to the provision of adequate reception facilities. Since the incentives to improve reception facilities are dependent, at least partly, on the receipt of adequate information about alleged inadequacies, Governments were also urged to respond to a questionnaire on alleged inadequacy of port reception facilities (IMO document MEPC/Circ.417) and to report their experiences to the Committee at its fifty-third session with the aim of identifying problem areas and developing a future action plan. The responses received by the IMO secretariat indicate that the overall awareness of ships' masters of the reporting procedures to be followed in case of alleged inadequacy of port reception facilities appears to be very low; the contact details of the national authorities responsible for handling reports are not widely available; the format for reporting alleged inadequacies could be further improved; not all port States have ensured the provision of proper arrangements to consider, investigate and respond appropriately and effectively to reports of inadequacy of port reception facilities; the obligation of the port State to report the outcome of its investigation to IMO and the flag State is not clearly stated in the reporting procedures; the existing reporting procedures do not seem to offer appropriate incentives for ships to report alleged inadequacies and for port States to respond appropriately to such reports; and fear of retaliation for reporting alleged inadequacies of port reception facilities seems to be one of the main causes of the low reporting rate by ships (see IMO document FSI 13/19). In order to promote the implementation of the waste reception facility reporting requirements, the IMO secretariat has developed a draft outline for a port reception facility database to form an integral part of the IMO global integrated shipping information system (see IMO document FSI 13/19/2).

(e) Particularly Sensitive Sea Areas

124. The Western European Waters is the seventh area to have been designated by MEPC as a Particularly Sensitive Sea Area (resolution MEPC.121(52)).[42] The area covers the western coasts of the United Kingdom, Ireland, Belgium, France, Spain and Portugal, from the Shetland Islands in the north to Cape Vicente in the south,

and the English Channel and its approaches. The mandatory ship reporting system adopted by the Committee as an associated protective measure will take effect on 1 July 2005. The use of the reporting system for ships entering the area will be free of charge (IMO document MEPC 52/54, para. 8.4).

125. Four other marine areas have also been approved in principle as Particularly Sensitive Sea Areas, but have not yet been designated by the Committee, pending the adoption of associated protective measures. One of these areas is the Torres Strait region, which was designated a Particularly Sensitive Sea Area in principle at the Committee's forty-ninth session. Australia's proposed associated protective measure to introduce a compulsory pilotage arrangement in the Torres Strait region was discussed in 2004 by the IMO Subcommittee on Safety of Navigation, MEPC, the IMO Legal Committee and MSC. The Protection Committee had agreed to refer the legal aspects of compulsory pilotage in straits used for international navigation to the Legal Committee, in order to enable the seventy-ninth session of MSC to consider the proposal with the issue of the legal basis resolved. However, the Legal Committee was unable to reach agreement at its eighty-ninth session on the legality of compulsory pilotage in a strait used for international navigation. Among other things, views differed on whether the absence of a specific provision in UNCLOS could be interpreted as permitting the introduction of a compulsory pilotage system in a strait used for international navigation (see IMO document LEG 89/16, sect. O).

126. At the seventy-ninth session of MSC, Australia made a new proposal to extend the current associated protective measure of a system of non-compulsory pilotage within the Great Barrier Reef, in resolution MEPC.45(30), to include the Torres Strait. MSC agreed that the proposal should be adopted and that a new paragraph, which would recommend that flag States inform their ships that they should act in accordance with Australia's system of pilotage when transiting the Torres Strait, be incorporated in a revised resolution MEPC.45(30) (IMO document MSC 79/23, paras. 10.11-10.16). In July 2005, MEPC will give further consideration to the extension of the Great Barrier Reef Particularly Sensitive Sea Area to include the Torres Strait, taking into account the decision of MSC. At that session, the Committee will also consider the outcome of the work of the correspondence group which has been established to review the IMO guidelines for the identification and designation of Particularly Sensitive Sea Areas.[41] The group is preparing a draft IMO Assembly resolution and a proposed revised text of the guidelines.

(f) Liability and compensation for oil pollution damage

127. The 2003 Protocol establishing an International Oil Pollution Compensation Supplementary Fund, whose adoption was welcomed by the General Assembly in its resolution 59/24, entered into force on 3 March 2005. It has been ratified by eight States, which have received a combined total of 450 million tons of contributing oil. Participation in the Fund is optional, although open to all States parties to the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1992 (Fund Convention). The 2003 Fund will supplement the compensation available under the International Convention on Civil Liability for Oil Pollution Damage, 1992 and the Fund Convention with an additional, third tier of compensation available to victims in the States which accede to the Protocol. The Supplementary Fund will have available approximately $835 million, in addition to the $315 million which is available in the 1992 Fund. As noted by the Fund secretariat, the Fund acts within the objective of article 235 of

UNCLOS, namely to ensure that prompt and adequate compensation is available to victims of oil pollution, and is an example of cooperation between States to achieve this objective.

(g) Air pollution

128. The regulations for the prevention of air pollution from ships, contained in annex VI to MARPOL, will enter into force on 19 May 2005. They set limits on sulphur oxide and nitrogen oxide emissions from ship exhausts and prohibit deliberate emissions of ozone depleting substances. At its fifty-second session, MEPC reviewed the draft amendments to annex VI that had been approved at previous sessions of the Committee, with a view to their adoption at the fifty-third session. These amendments relate to the designation of the North Sea area as a sulphur oxide emission control area and to the introduction of the harmonized system of survey and certification into annex VI.

129. MEPC also made progress in developing draft guidelines on the carbon dioxide indexing scheme and urged members to carry out trials using the scheme and to report to the next session. One purpose of developing guidelines on carbon dioxide emission indexing is to develop a simple system that could be used voluntarily by ship operators during a trial period. The Committee agreed that a carbon dioxide indexing scheme should be simple and easy to apply and take into consideration matters related to construction and operation of ships and market-based incentives. As for the IMO guidelines on greenhouse gas emissions, the fifty-second session of MEPC recognized that they should address all six greenhouse gases covered by the Kyoto Protocol, which calls for the reduction of emissions from ships of carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride.

European Union

130. A 2002 communication from the Commission of the European Union to the European Parliament and to the Council sets out a strategy to reduce atmospheric emissions from seagoing ships. The basic objective of the strategy is to take stock of the environmental and health problems caused by atmospheric emissions from seagoing ships and to define objectives, actions and recommendations to help reduce such emissions over the next 10 years. The strategy includes a proposal for a directive on the sulphur content of marine fuels. The communication also outlines a number of actions to achieve its objectives, including coordinating the positions of member States of the European Union within IMO to press for tougher measures to reduce ship emissions. The entry into force of MARPOL annex VI is a fundamental aspect of the strategy; if IMO has not proposed tighter international standards by 2007, the European Union will bring forward a proposal to reduce nitrogen oxide emissions from seagoing vessels.

3. Control of harmful organisms and pathogens in ballast water

131. The main source of introductions of alien invasive species is considered to be ballast water from ships. Significant advances have been made in management of ballast water in recent years, and the rapid entry into force and effective implementation of the International Convention on the Control and Management of Ships' Ballast Water and Sediments[44] by IMO member States will further assist in

dealing with the problem. At its fifty-second session, MEPC finalized guidelines for the approval of ballast water management systems and approved the procedure for approval of active substances, with a view to their adoption at the fifty-third session. The development of other guidelines will continue in the Subcommittee on Bulk Liquids and Gases and at future sessions of MEPC.

4. Waste management

132. The twenty-sixth consultative meeting of contracting parties to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (London Convention) examined the scope of article III(1)(b)(i) of the Convention, which states that "dumping" does not include normal operations of vessels. The consultative meeting noted that the Scientific Group, at its twenty-seventh session, had expressed concern with regard to the broad interpretation of the "cargo-associated wastes" which could be discharged by ships under MARPOL annex V (garbage). The consultative meeting agreed to approach the Marine Environment Protection Committee of IMO to clarify the boundaries between MARPOL and the London Convention and the 1996 Protocol. It also reviewed the wide range of possible relations with other organizations, where there could be a strong cross-sectoral linkage. Monitoring of the marine environment, coastal management and technical cooperation and assistance were considered to be the main cross-sectoral issues.

133. The consultative meeting considered the challenge of stabilizing greenhouse gas concentrations in the atmosphere and recognized that carbon dioxide capture and storage in geological structures under the sea might offer important possibilities for making fossil fuel use more compatible with climate change mitigation policies. In this context, it was agreed that the issue of carbon dioxide sequestration should be included in the work programme of the London Convention and to initially focus on sequestration of carbon dioxide in geological structures. Legal, scientific and technical issues involved are to be examined in the intersessional period so that the next consultative meeting can review the progress and give guidance on what further work should be done to establish a clear position.

134. In preparation for the entry into force of the 1996 Protocol, possibly in 2005, the consultative meeting embarked on the review of an initial text containing options for compliance procedures and mechanisms under article 11 of the Protocol. Once the Protocol is in force, its most significant effect will be to move away from a list of materials which may not be dumped at sea (as under the London Convention itself) to a reverse listing approach, prohibiting all dumping except for a restricted list of non-hazardous materials that may be considered for disposal at sea, only after an environmental assessment.[45]

5. Shipbreaking/recycling/dismantling

135. Ships sold for scrapping may contain environmentally hazardous substances such as asbestos, heavy metals, waste oils, ozone depleting substances and others, which need to be disposed of safely. Concerns have also been raised about the working and environmental conditions at many of the world's ship scrapping facilities, generally located in developing countries. Currently, only a few scrapping facilities can perform ship recycling in an acceptable way in relation to the environment and workers' health and safety. A recent report by the European

Commission predicts that, even with a planned increase in "green" recycling facilities, they will be able to handle only around 30 per cent of the expected total scrapping demand in most years, and much less in the peak demand years.[46] Demand will increase after April 2005, due to the accelerated phase-out scheme for single hulled oil tankers adopted by IMO in 2003 (see A/59/62, paras. 172 and 173).

136. *International Labour Organization*. At its two hundred eighty-ninth session, the ILO Governing Body adopted guidelines on safety and health in shipbreaking for Asian countries and Turkey, which provide a coherent framework under which Governments, employers and workers can improve occupational safety and health in the shipbreaking yards. These guidelines will complement those already adopted by IMO in 2003 and the Conference of the Parties to the Basel Convention in 2002 (see para. 138 below). In addition, ILO has embarked upon a three-year UNDP-funded technical cooperation project in Bangladesh on safe and environmentally friendly ship recycling.

137. *International Maritime Organization*. In its resolution 59/24, the General Assembly welcomed the adoption of the IMO guidelines on ship recycling (resolution A.962(23)) and called upon States to follow these guidelines in order to minimize marine pollution. At its fifty-second session, MEPC agreed that certain parts of the guidelines might be given mandatory effect (IMO document MEPC 52/24, sect. 3). It also decided to develop a reporting system for ships destined for recycling that is transparent and effective, ensures uniform application, respects commercially sensitive information and facilitates the control and enforcement of any mandatory provisions that might be developed. A draft outline of the system has been developed in order to identify, in a schematic way, what should be reported, to whom and by whom (IMO document MEPC 52/WP.8). MEPC further agreed to replace the existing appendices 1, 2 and 3 to the guidelines with a "single list" that provides guidance on the identification of potentially hazardous materials on board ships and the preparation of the relevant inventories. The Committee also approved guidelines for the development of a ship recycling plan (IMO document MEPC/Circ.419). In order to assist developing countries improve environmental and safety levels in ship recycling operations, the Committee agreed that ship recycling should be included in the future thematic priorities of the IMO Integrated Technical Cooperation Programme and invited the Technical Cooperation Committee to consider further the arrangements for establishing a dedicated ship recycling fund.

138. *Basel Convention*. The seventh Conference of the Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal[47] adopted decision VII/26 on environmentally sound management of ship dismantling. In its decision, the Conference of the Parties noted that a ship may become waste as defined in article 2 of the Basel Convention and that at the same time it may be defined as a ship under other international rules. In this connection, the Conference of the Parties realized that States may have distinct obligations as parties to UNCLOS and relevant IMO conventions, including their obligations as flag States, and as Parties to the Basel Convention, including their obligations as States of export, and noted that States should be able to meet these obligations in a consistent manner. In this regard, the Conference of the Parties invited the IMO/ILO/Basel Convention Joint Working Group to discuss the responsibility of flag States in the context of environmentally sound management of ship dismantling. Finally, the Conference reminded the Parties to fulfil their obligations

under the Basel Convention, in particular their obligations with respect to prior informed consent, minimization of transboundary movements of hazardous wastes and the principles of environmentally sound management, and invited developed States in particular to encourage the establishment of domestic recycling facilities. These decisions, which were adopted despite the disagreement of some States and part of the shipping industry, arrived at a time when a large number of single hull oil tankers are due to be recycled.[45]

139. *Abandonment of ships*. The Conference of the Parties to the Basel Convention adopted, for the first time, a decision on abandonment of ships (decision VII/27). Concerned that the abandonment of ships on land or in ports could have effects on human health and the environment, the Conference invited parties to submit information in this regard to the secretariat of the Basel Convention for consideration and action by the Open-ended Working Group. The secretariat of the Basel Convention was also requested to consult IMO on this issue.

140. *Joint ILO/IMO/Basel Convention Working Group on Ship Scrapping*. The Joint Working Group on Ship Scrapping held its first meeting in February 2005 to consider the respective work programmes of the pertinent bodies of ILO, IMO and the Conference of the Parties to the Basel Convention on the issue of ship scrapping, with the aim of avoiding duplication of work and overlapping of roles, responsibilities and competencies among the three organizations, as well as identifying further needs. It also undertook an initial examination of the relevant guidelines produced by each of the organizations and considered mechanisms to jointly promote their implementation.

141. The Group agreed that the three organizations should ensure that the issue of abandonment of ships on land or in ports would be adequately covered by an international legally binding instrument. It also decided that the three organizations should be asked to consider a global technical cooperation programme on ship scrapping. Regarding the establishment of a ship recycling fund, the Group was of the opinion that all efforts should be focused on the further consideration by IMO of the proposal agreed to in principle by MEPC at its fifty-second session.

6. Regional cooperation

(a) UNEP Regional Seas Programme

142. The Regional Seas Programme continues to provide a comprehensive institutional framework for regional and global cooperation on issues pertaining to the coasts, oceans and seas. Currently, the Programme covers 17 regions, supported through either a regional convention or a regional action plan. The strategic directions for the conventions and action plans and for the Regional Seas Programme Coordination Office were further addressed at the sixth Global Meeting of the Regional Seas Conventions and Action Plans, held in Istanbul, Turkey, from 30 November to 2 December 2004. The Global Meeting identified actions to be implemented during 2004-2007 to strengthen the Regional Seas Programme at the global level, while continuing to implement the action programmes of the individual regional seas programmes as agreed by their governing bodies. Some actions taken by the Coordination Office in Nairobi include the development of a database that identifies existing actors and potential partners in the regional seas programmes, in order to share best practices in the field of conservation and management of the

marine and coastal environment among the various programmes; the forging of new partnerships (e.g. the White Water to Blue Water partnership in the Caribbean); and the establishment of a new Web-based information centre. In addition, a memorandum of understanding between the International Oceanographic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organization (UNESCO) and UNEP was signed, which will provide a framework for collaboration between the Global Ocean Observing System and the Regional Seas Programme.

143. On the regional level, the Northwest Pacific Action Plan celebrated its tenth anniversary with the opening of a co-hosted Regional Coordinating Unit in Toyama, Japan and Busan, Republic of Korea. The States members of the Action Plan signed the memorandum of understanding for the regional oil spill contingency plan, which is a benchmark for the protection of a shared marine environment in the region and will serve as the basis for cooperation between the affected country and its neighbours in the case of major oil spill emergencies. In the Mediterranean Sea region, the amended Barcelona Convention entered into force in June 2004, widening its scope to address sustainable development and biodiversity conservation. The Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aden, with the assistance of the Marine Environmental Studies Laboratory of IAEA, has reviewed the ongoing monitoring and assessment activities in the region. Based on this review, PERSGA developed its regional environmental monitoring programme. In order to implement this programme and using a phased approach, PERSGA began a one-year capacity-building programme in July 2004.

(b) Arctic

144. According to the report entitled "Impacts of a Warming Arctic",[49] the Arctic climate is warming rapidly, at almost twice the rate as the rest of the world in the past two decades. This is evidenced by widespread melting of glaciers and sea ice, thawing permafrost and the shortening of the snow season. The report, published in November 2004, synthesized the key findings of the Arctic Climate Impact Assessment, an evaluation commissioned by the Arctic Council and the International Arctic Science Committee (an international scientific organization appointed by 18 national academies of science). The culmination of an unprecedented four-year scientific study of the region conducted by an international team of 300 scientists, the report states that at least half the summer sea ice in the Arctic is projected to melt by the end of this century, along with a significant portion of the Greenland Ice Sheet, as the region is projected to warm an additional 4 to 7 degrees centigrade by 2100.

145. The effects of a warmer Arctic for natural systems and society in the area are reported to be manifold. Since more than half of the Arctic region consists of oceans, climatic variations will have a large impact on marine environments and marine-related activities. These impacts would include rising sea levels; changes in ocean salinity, which could strongly affect regional climate; the decline or extinction of marine species due to habitat loss; expanding marine shipping; and the enhancement of some major Arctic fisheries together with the decline of others. Climate change is also projected to have effects outside the Arctic, such as global sea-level rise and intensifying global warming. The Arctic provides natural resources to the rest of the world, which are likely to be affected by climate change.

The Arctic Climate Impact Assessment report and other studies[50] agree that, in addition to climate change, many other stresses caused by human activities are affecting Arctic life, including pollution, overfishing, increasing levels of ultraviolet radiation due to ozone depletion and habitat alteration.

146. At the fourth ministerial meeting of the Arctic Council, held in Reykjavik in November 2004, the ministers issued a declaration[51] noting with concern the findings and impacts documented by the Arctic Climate Impact Assessment. The ministers acknowledged that such findings, as well as the underlying scientific assessment, would help inform Governments as they implemented and considered future policies on global climate change. They emphasized the importance of circumpolar and international cooperation in addressing circumpolar challenges; requested the Working Group on the Protection of the Arctic Marine Environment to conduct a comprehensive Arctic marine shipping assessment; recognized the evidence that many global environmental changes were having significant effects on the Arctic's living resources, the Arctic environment and Arctic residents; and noted that conservation of biodiversity was necessary for achieving sustainable development in the region.

(c) Antarctic

147. The unique Antarctic environment continues to be under threat from a rapidly warming atmosphere, the thinning of the ozone layer, and increasing levels of fishing and tourism. According to recent studies, the Antarctic Peninsula is among the fastest-warming places on earth, with annual temperatures that have risen around 2.5 degrees centigrade in the past 50 years. These warmer conditions have reportedly led to increased colonization by plants in certain areas and to a decline in sea ice, which could be responsible for a considerable drop in Antarctic krill. Since krill is at the heart of the food web, Antarctic whales, seals, fish and penguins could be threatened by food shortages in the Southern Ocean as a consequence of this decline in krill stock.[52] Disintegration of ice shelves and melting of glaciers[53] due to regional warming may also cause sea levels to rise.[54]

148. The twenty-seventh consultative meeting of parties to the Antarctic Treaty endorsed the guidelines for ships operating in Arctic and Antarctic ice-covered waters (decision 4 (2004)) for transmission to IMO, with a request to consider them at the earliest opportunity. The Guidelines include provisions on construction, equipment and operational issues, as well as provisions regarding environmental protection and damage control. The meeting also adopted measure 4 (2004) and resolution 4 (2004), which recommend that Governments require those under their jurisdiction organizing or conducting tourist or other non-governmental activities in Antarctica to have appropriate contingency plans and sufficient arrangements for health and safety, search and rescue and medical care, as well as adequate insurance, before undertaking any such activities, and resolution 1 (2004) on enhancing prevention of marine pollution by fishing activities.

B. Marine biological diversity

149. In recent years the issue of the conservation and sustainable use of marine ecosystems and biodiversity has been considered in a number of forums. In 2003, the General Assembly focused on the protection of vulnerable marine ecosystems

generally, while in 2004 the focus was on the conservation and management of biodiversity in areas beyond national jurisdiction. In paragraph 73 of resolution 59/24, the Assembly decided to establish an ad hoc open-ended informal working group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction. In order to assist in the preparation of the agenda of the working group, the Assembly also requested the Secretary-General to prepare a report on a number of issues identified in paragraph 73. The report for the working group will be issued as an addendum to the present report.

Convention on Biological Diversity

150. At its seventh meeting, held in Kuala Lumpur in February 2004, the Conference of the Parties to the Convention on Biological Diversity adopted an Elaborated Programme of Work on Marine and Coastal Biological Diversity, including programme elements on the implementation of integrated marine and coastal area management; marine and coastal living resources; marine and coastal protected areas; mariculture; and invasive alien species.[50]

151. At its tenth meeting, held in Bangkok in February 2005, the Subsidiary Body on Scientific, Technical and Technological Advice of the Convention considered draft global outcome-oriented targets for the Programme of Work on Marine and Coastal Biological Diversity. The draft targets, as requested by the Conference of the Parties in decision VII/30, outline how the Convention's goal of achieving a significant reduction of the current rate of biodiversity loss by 2010 can be reached for oceans and coasts.[50] The Subsidiary Body recommended that the Conference of the Parties at its eighth meeting, to be held in 2006, endorse the integration of these targets into the Programme of Work (recommendation X/4) and that it adopt a new work programme on island biological diversity, developed with the assistance of an ad hoc technical expert group. The new programme of work contains goals, global targets, time frames and island-specific priority actions, and is available in the annex to recommendation X/1.[50]

152. The Ad Hoc Open-ended Working Group on Protected Areas, established by decision VII/28 to, inter alia, explore options for cooperation for the establishment of marine protected areas in marine areas beyond national jurisdiction, will hold its first meeting in Montecatini, Italy, in June 2005. Two background documents will be presented to the Working Group: a scientific analysis of high seas biodiversity and a legal analysis of existing international and regional legal instruments, including options for cooperation for the establishment of marine protected areas beyond national jurisdiction.

Convention on International Trade in Endangered Species of Wild Fauna and Flora

153. The thirteenth Conference of the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora, held in Bangkok in October 2004, decided to list the great white shark and the humphead wrasse, two fish species of great commercial value, in appendix II to the Convention. This means that they can now only be traded between parties to the Convention with permits. Another marine species, the Irrawaddy dolphin, was transferred from appendix II to appendix I, which forbids all commercial trade.[50] A proposal to downlist minke

whales was rejected. The Conference of the Parties also adopted a decision on trade in alien invasive species (resolution Conf.13.10). At the conclusion of the meeting, the Secretary-General of the Convention noted that in recent years the Convention had started to list commercially valuable fish species, suggesting that Governments believe the Convention can contribute to the goal agreed at the World Summit on Sustainable Development, of restoring fishery stocks to sustainable levels by 2015.[59]

Corals

154. Coral reefs and associated ecosystems are invaluable human treasures. They support the most diverse marine communities and beautiful seascapes on the planet, and provide wave-resistant structures and resources for local communities, fisheries and tourism. However, coral reefs and associated ecosystems are now under serious threat of collapse because overfishing, development of the coastal zone, including dredging and landfill, and terrestrial run-off, as well as climate change, act synergistically to stress coral reefs leading to severe bleaching and extensive coral mortality.[60] The report "Status of Coral Reefs of the World: 2004" highlights the main threats to coral reefs and puts forward a number of conservation and governance recommendations.[61]

155. The vulnerability of cold-water coral ecosystems is becoming an important component of the work on coral reefs. The UNEP Coral Reef Unit, in partnership with Ireland, Norway, the United Kingdom and WWF (formerly the World Wildlife Fund), prepared a comprehensive and up-to-date report entitled "Cold-water coral reefs, out of sight — no longer out of mind".[62]

156. The United Kingdom/Seychelles secretariat of the International Coral Reef Initiative decided at its second general meeting to include cold-water coral reef issues within the remit of the Initiative. A draft programme of work on cold-water corals will be presented for adoption at the next general meeting. The meeting will also celebrate the 10-year anniversary of the International Coral Reef Initiative. Starting in July 2005, the Governments of Japan and Palau will co-host the next secretariat of the Initiative.

Anthropogenic noise pollution

157. Human-produced underwater ocean noise pollution has received increasing attention in international forums, including the International Whaling Commission,[63] the European Parliament[64] and the third World Conservation Congress of the International Union for the Conservation of Nature and Natural Resources.[65] In the report on the fifth meeting of the United Nations Open-ended Consultative Process on Oceans and the Law of the Sea (A/59/122, para. 97) undersea noise pollution was included among the issues that could benefit from attention in future work of the General Assembly.

C. Climate change

158. *United Nations Framework Convention on Climate Change*. The tenth anniversary session of the Conference of Parties to the United Nations Framework Convention on Climate Change, held in December 2004, adopted the Buenos Aires programme of work on adaptation and response measures (decision 1/CP.10). The programme includes further scientific assessments of vulnerabilities and options for

adaptation, support to the national action plans on adaptation of least developed countries, new workshops and technical papers on various aspects of climate change risk and adaptation and support for mainstreaming adaptation into sustainable development planning. The Conference of Parties requested the Convention secretariat to convene a seminar of governmental experts in May 2005, to promote an informal exchange on (a) actions relating to mitigation and adaptation to assist parties to continue to develop effective and appropriate responses to climate change; and (b) policies and measures adopted by their respective Governments that support the implementation of their existing commitments under the United Nations Framework Convention on Climate Change and the Kyoto Protocol. Other key decisions related to the rapidly evolving carbon market where allowances and credits from projects that reduce emissions can be purchased and sold. As of 1 January 2005, emissions trading has become a reality for 12,000 companies in the European Union.

159. *The 1997 Kyoto Protocol to the United Nations Framework Convention on Climate Change*. On 18 November 2004, the Russian Federation ratified the Protocol, enabling it to come into force on 16 February 2005. The Kyoto Protocol adds detailed requirements to the general principles established in the Framework Convention by committing annex I parties to individual, legally binding targets to limit or reduce their greenhouse gas emissions. The individual targets for annex I parties listed in annex B to the Kyoto Protocol add up to a total cut in greenhouse gas emissions for those countries of at least 5 per cent from 1990 levels in the commitment period 2008-2012.

D. Small island developing States

160. Small island developing States are among the most vulnerable in the world in relation to the intensity and frequency of natural and environmental disasters, and face disproportionately high economic, social and environmental consequences. The tragic impacts of the 26 December 2004 Indian Ocean earthquake and tsunami and the recent hurricane/cyclone/typhoon seasons in the Caribbean and Pacific highlight their vulnerability. Small island developing States have undertaken to strengthen their respective national frameworks for more effective disaster management and are committed, with the necessary support of the international community, to achieve sustainable development and to improve the lives of their inhabitants.[56] This context highlighted the importance of the International Meeting to Review the Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States, held in Port Louis, Mauritius from 10 to 14 January 2005, essentially to review the 1994 Barbados Programme of Action and to seek innovative ways to improve the situation of approximately 51 small island developing States located throughout the world. The Meeting unanimously adopted both a proactive strategy to further implement the programme of action, called the Mauritius Strategy, and a political declaration, the Mauritius Declaration.

161. The major document to come out of the Meeting, the Mauritius Strategy for the Further Implementation of the Barbados Programme of Action,[22] states that small island developing States are already experiencing major adverse effects of climate change, that climate change may even threaten their very existence and that adaptation to adverse impacts of climate change and sea-level rise remains a major priority for them.

162. The Strategy notes that small island developing States are defined by their historic, cultural and economic links to the oceans and seas. They continue to be heavily dependent on their marine resources, particularly for the sustainable livelihoods of coastal communities. While small island developing States have integrated the management of coastal and marine resources into broader ocean management strategies since the entry into force of UNCLOS, implementation of the Convention continues to be impeded by financial constraints and lack of capacity. The Strategy recognizes the importance for small island developing States of giving priority at all levels to oceans issues, including fisheries. It declares that further action is required, with the necessary support of the international community, to enable small island developing States to complete the delimitation of their maritime boundaries, submit any claims to the Commission on the Limits of the Continental Shelf, and assess seabed living and non-living resources within their national jurisdiction.

163. The Strategy further recognizes that action is required to build small island developing States' technical and financial capacities to (a) establish effective monitoring, reporting and enforcement and control of fishing vessels, including by small island developing States as flag States, so as to further implement international plans of action to prevent, deter and eliminate illegal, unreported and unregulated fishing and to manage capacity; (b) strengthen or develop national and regional sustainable and responsible fisheries management mechanisms, consistent with the FAO Code of Conduct for Responsible Fisheries; (c) fully implement surveillance and monitoring systems; (d) analyse and assess the status of stocks; (e) consider becoming parties, if they have not yet done so, to the United Nations Fish Stocks Agreement and the FAO High Seas Fishing Compliance Agreement, as well as to relevant regional fisheries agreements; and (f) establish or enhance the necessary infrastructure and legislative and enforcement capabilities to ensure effective compliance with, and implementation and enforcement of, their responsibilities under international law. Until action is taken on the last point, small island developing States that are flag States are encouraged to consider declining the granting of the right to fly their flag to new vessels, suspending their registry or not opening a registry.

164. The Strategy also states that small island developing States will work to put in place integrated policies and sound management approaches, such as marine protected areas, consistent with relevant international agreements, and develop national capacity to monitor, conserve and sustainably manage coral reefs and associated ecosystems, taking into account the Elaborated Programme of Work on Marine and Coastal Biological Diversity (see para. 150 above). Small island developing States should address as a priority the impacts of coastal development, coastal tourism, intensive and destructive fishing practices, pollution and the unreported and illegal trade in corals on the future health of coral reefs. To facilitate these initiatives, the international community should provide support for IOC marine science programmes of interest to small island developing States. Small island developing States and development partners should fully implement the GPA, taking initiatives with UNEP to address their specific vulnerabilities.

165. The Strategy acknowledges the progress made by some small island developing States in planning and implementation of waste management policies, programmes and strategies, but recognizes that most of them have serious difficulties in terms of financial and technical capacity in dealing with waste

management issues. It states that marine debris, ballast water, shipwrecks with potential to cause environmental hazard due to leaks, and other forms of waste threaten small island developing States' ecological integrity.

Food and Agriculture Organization of the United Nations

166. As a follow-up to the Mauritius International Meeting, FAO will convene a special conference of ministers of agriculture of small island developing States to review the Mauritius Strategy during its Governing Conference, to be held in Rome from 19 to 26 November 2005. The Strategy urges the FAO special conference to consider endorsing priority actions for an enhanced contribution of agriculture, forestry and fisheries to small island developing States' sustainable development policies.

UNEP Regional Seas Programme

167. The Regional Seas Programme and the GPA Coordination Office prepared a policy publication on UNEP and small island developing States, entitled *UNEP and Small Island Developing States: 1994-2004 and future perspectives*, as part of the preparatory process for the Mauritius International Meeting. Within the context of UNEP support to small island developing States, to the South Pacific Region Environment Programme and to the secretariat of the Basel Convention, the Regional Seas Programme assisted the Basel Convention secretariat in the preparation of a paper on the preliminary elements for the development of an integrated waste management strategy for the Pacific island States, which was presented to the Mauritius International Meeting.

X. Areas of focus at the sixth meeting of the Consultative Process

A. Fisheries and their contribution to sustainable development[67]

1. Role of fisheries in sustainable development

(a) General

168. The 1987 report of the World Commission on Environment and Development (the Brundtland Commission) defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".[68] FAO indicates that "Sustainable development is the management and conservation of the natural resource base, and the orientation of technological and institutional change in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations. Such development conserves land, water, plant and genetic resources, is environmentally non-degrading, technologically appropriate, economically viable and socially acceptable".[69]

169. Sustainable development is usually divided into four primary dimensions: economic, environmental, social and institutional. Application of the concept requires the integration of economic, social and environmental issues in decision and policymaking at all levels, including those that address traditional economic

sectors and government activities, such as economic planning, agriculture, health, energy, water, natural resources, industry, education and the environment. As a people-centred concept, sustainable development must include as its main objectives progress (improving quality of life), justice, durability, stability and resilience.[70]

170. In setting the internationally agreed goals contained in the United Nations Millennium Declaration, the international community has committed itself to making a sustained effort to combat poverty. While confirming that eradicating poverty is the greatest global challenge facing the world today, the World Summit on Sustainable Development also acknowledged that oceans and coastal areas are critical for global food security and agreed on ambitious new targets for resources management and fisheries. Fisheries, including aquaculture, play an important economic role and contribute to sustainable development in many countries, as they are capable of providing current generations with access to food, employment, recreation and trade without compromising the ability of future generations to meet their own needs.

171. For the fisheries sector to contribute to sustainable development, it has itself to be managed in a sustainable way. Fisheries management should promote the maintenance of the quality, diversity and availability of fishery resources in sufficient quantities for present and future generations in the context of food security, poverty alleviation and sustainable development. Management measures should ensure the conservation not only of target species but also of species belonging to the same ecosystem or associated with or dependent upon the target species. Fisheries management should also take account of the economic, social and cultural needs of fisheries-dependent communities, as well as the requirement of developing countries to maintain revenues from trade that are necessary for their development.

172. In 1984, the FAO World Conference on Fisheries Management agreed on a Strategy for Fisheries Management and Development,[71] recommending the adoption of fishery development plans, including all aspects of the fisheries sector, not only harvesting, processing, marketing, servicing and material supply, but also the development of the infrastructure, technology and human resources to enable developing countries to better exploit their fishery resources, to increase added value to the economy and to improve employment opportunities. The Strategy stressed the importance for all those involved in the fishing sector to understand the social value of fisheries as a source of food, employment and profit, and thus to use fishing methods and processes that do not exhaust resources or threaten ecosystems. The Strategy recognized the special role and needs of small-scale fisheries, rural fishing and fish-farming communities and recommended that they be given priority in fisheries development policies.

(b) Contribution of fisheries to poverty alleviation and food security[72]

173. In 2000, employment in the capture fisheries and aquaculture sectors was estimated at 35 million people, while the number of those dependent on fisheries as a source of income has been estimated at 200 million worldwide. The number of fishers has been growing at an average rate of 2.2 per cent per annum since 1990, whereas aquaculture workers have increased by an annual average of 7 per cent. Around 97 per cent of all fishery workers live and work in developing countries. The majority of them live in Asia (85 per cent) and Africa (7 per cent), with far

fewer employed in Europe, North America and South and Central America (around 2 per cent each).[73]

174. Aside from trade benefits, the more considerable and substantial contribution of the fisheries sector, particularly small-scale fisheries and aquaculture, to sustainable development is its contribution to poverty alleviation and food security, especially in remote coastal areas. Small-scale fisheries can be broadly characterized as employing labour-intensive harvesting, processing and distribution technologies to exploit fishery resources. They may operate at widely different organizational levels ranging from self-employed single operators through informal microenterprises to formal sector businesses, but they all provide employment opportunities and income generation to many people in coastal and rural communities, most of whom are poor.

175. Most fishers in developing countries depend on small-scale, artisanal or subsistence fishing and fish farming for livelihood and income. Typically men are engaged in fishing and women in fish processing and marketing. Women are also known to engage in near-shore harvesting activities and men are known to be involved in fish marketing and distribution. Fishing or fish farming is often undertaken next to other economic household activities including farming and small-scale trading. These multiple economic activities not only help to bridge the great seasonality in the abundance of fishery resources, but also insure against risks of failing production in any single activity. The socio-economic importance of these activities is often difficult to measure, but it is undeniable, not only in terms of their contribution to production and income but also of food security for the communities concerned.

176. Ancillary activities are also created by fishing in coastal communities. Fisheries often generate significant indirect multiplier effects through intrasectoral interactions (e.g. between capture fisheries and other activities, such as net-making and repair, or between capture fisheries and aquaculture through the supply of fishmeal), as well as intersectoral interactions (e.g. between forestry and fisheries through the supply of timber for boat-building, or between agriculture and aquaculture through the supply of feed). Moreover, the infrastructure developed for fisheries (feeder roads, landing sites and coastal havens, water-retaining ponds) tend to trigger further economic developments in other sectors, such as tourism or agriculture.

177. In addition to providing employment, fisheries are considered to be critical to food security in many countries, particularly in low-income food-deficit countries. As the FAO World Food Summit indicated in 1996, "Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life".[74] Fisheries contribute to such food security by increasing available food supply and consumption (fish as food); by doing so at times when other foods are in scarce supply (continuity of supply); and by generating income for the purchase of food (fish as source of income).

178. Small-scale fisheries exploit a renewable source of food that provides animal protein, fish oils and essential micronutrients such as calcium, iodine and certain vitamins. Globally, some 17 per cent of the animal protein supply for human consumption comes from fisheries, and in many developing countries, especially in the Asian region, this share is above 50 per cent.[75] Fish has become the primary

source of protein for 950 million people and is an important part of the diet of many more; worldwide, people eat more fish than any other type of animal protein.[76]

179. Due to the perishable nature of fishery products, production from many small-scale fisheries is consumed locally as well as processed into forms that do not perish easily. Whether conducted full-time or part-time, or just seasonally, activities of small-scale fisheries are often targeted on supplying fish and fishery products to local and domestic markets, and for subsistence consumption. Export-oriented production, however, has increased during the last decade thanks to greater market integration and globalization.

180. With particular reference to low-income food-deficit countries, aquaculture has integrated naturally with agriculture and constituted a realistic strategy to increase food security at small cost, by providing the means for fishers and farmers to bridge the food gap they confront between planting and harvesting. In those countries, fish is a well-known and frequently consumed and traded food product, even in the poorest communities, and is an important source of income.

181. Through local trading, fishers and fish farmers in developing countries contribute to better food security not only for their own households but also for households where members neither capture fish in the wild nor raise it in captivity.[77] Moreover, the poor agro-ecological characteristics of much coastal land means that fishing can play an important role as a safety valve when agricultural production or livelihood strategies in non-fishing communities are under threat. Consequently, it is important for those fishing communities to have secure access to fishery resources and to manage such resources at sustainable levels.

(c) Contribution of fisheries to world trade

182. The role of the fisheries sector in international trade is significant. Fish products are valuable commodity exports for both developed and developing countries. In 2000, total world trade of fish and fishery products was estimated to have an export value of $55.2 billion. In some countries fish exports are a major contributor to foreign exchange earnings, often ranking far higher than other agricultural commodities. In many countries, fishery exports are essential to the economy. Fishery trade is particularly valuable for developing countries. It accounts for more than two thirds of the total value of traded commodities in countries such as the Seychelles, and the trade surplus in fishery commodities is significant in South America, Africa, China and Oceania. Net export trade from developing countries increased from $10 billion in 1990 to $18 billion in 2000.[78] Licensing fees from foreign fishing fleets and access agreements with foreign nations have also provided a source of foreign exchange revenue for many developing coastal States. Another important aspect of international fish trade is the increasing share of products derived from aquaculture.

183. Developed countries account for more than 80 per cent of the value of fishery product imports. Japan is the largest importer of fishery products, accounting for some 26 per cent of the global total, while fish makes up 4 per cent of its total merchandise trade. The United States of America, in addition to being the fourth largest exporting country, is the second largest importer of fish and fish products. European Union member States are also dependent upon imports for their fish supply, with Spain being the third largest importer of fish products in the world.[79] However, while revenues from the international fish trade can generate significant

benefits for the countries involved, such trade can also generate social and environmental problems. Increased foreign demand for fish products can, for instance, exacerbate pressure to harvest fish unsustainably or lead to excessive investment in fishing capacity, which in turn may lead to overfishing and depletion of fishery resources.

2. Legal and policy framework enhancing the contribution of fisheries to sustainable development

184. In recognition of the importance of fisheries to world food security, to the attainment of national economic and social goals and to the well-being and livelihoods of individuals and families involved in fisheries, the international community has adopted over the years a number of international instruments to ensure sustainability of the world's fisheries. Some of these instruments establish rights and obligations generally applicable in respect of fishery resources in marine areas within national jurisdiction and on the high seas, while others establish regimes for the conservation and management of specific fisheries. Whether legally binding or not, these instruments are aimed at ensuring the conservation and long-term sustainability of marine living resources, including fishery resources.

185. In recent years the concept of the precautionary approach[80] and an ecosystem approach aimed at improving governance of oceans and their resources have received wide recognition. Increasingly, the adoption of marine protected areas is advocated as an important tool for fishery conservation and management. Recent instruments recommend the strengthening of flag States' responsibilities in respect of vessels flying their flag fishing on the high seas, and in some instances, they introduce non-flag State enforcement on the high seas as a means to address the weakness of flag State jurisdiction, as well as port State measures to ensure compliance with international conservation and management measures. In addition, many conservation and management measures implementing global fishery instruments have been agreed among interested parties through regional fisheries management organizations to ensure conservation and management of specific species or stocks at the subregional and regional levels. National policies emphasizing the importance of fisheries for sustainable development have also been adopted in several countries.

(a) Global instruments promoting the conservation and sustainable use of fishery resources

186. *United Nations Convention on the Law of the Sea*, Part V and Part VII, section 2, of UNCLOS provide the legal framework for the conservation, management and sustainable utilization of marine fishery resources in the exclusive economic zone and on the high seas. In the exclusive economic zone, the coastal State has the obligation to ensure that living resources, including fishery resources, are not endangered by overexploitation, taking into account the best scientific evidence available to it, with a view to promoting the optimum utilization of such resources. To this end, it is entitled to enforce its fisheries laws and regulations in the exclusive economic zone against foreign fishing vessels, by taking such measures as boarding and inspection, arrest and judicial proceedings, to ensure compliance with its laws and regulations. On the high seas, fishing States are required to adopt conservation measures for fishery resources in respect of vessels

flying their flag on the basis of the best scientific evidence available to them and to cooperate with each other in the conservation and management of such resources.

187. In areas both within and beyond national jurisdiction, UNCLOS provides that conservation measures are aimed at maintaining or restoring populations of harvested species at levels which can produce the maximum sustainable yield, as qualified by relevant environmental and economic factors. With particular reference to the exclusive economic zone, UNCLOS (article 61.3) requires specific consideration of the economic needs of coastal fishing communities, as one of the relevant environmental and economic factors that needs to be addressed.

188. *The 1995 United Nations Fish Stocks Agreement*. The Agreement's stated objective is to ensure the long-term conservation and sustainable use of straddling fish stocks and highly migratory fish stocks through effective implementation of the relevant provisions of UNCLOS. In order to further this goal, the Agreement requires application of the precautionary approach and the ecosystem approach in the conservation and management of the two types of stocks. It also gives full consideration to the interests of artisanal and subsistence fishers as well as the special requirements of developing States in respect of the conservation and management of straddling fish stocks and highly migratory fish stocks. It further incorporates strong compliance control provisions that encompass subregional and regional cooperation in enforcement and port State control, in addition to flag States' enforcement duties.

189. *The 1993 FAO High Seas Fishing Compliance Agreement*. The Agreement sets out the responsibilities of the flag State to ensure compliance with international conservation and management measures by fishing vessels flying its flag. Under the Agreement, a vessel requires an authorization from the flag State in order to conduct fishing activities on the high seas. The flag State must grant such authorization only if it can exercise effectively its responsibilities vis-à-vis such a vessel. Restrictions are also put on the reflagging of fishing vessels, which had previously undermined international conservation and management measures. The Agreement requires flag States to maintain a record of fishing vessels entitled to fly their flag and authorized by them to fish on the high seas. All States parties are required to cooperate in the exchange of information on activities of fishing vessels reported to have engaged in activities undermining international conservation and management measures, in order to assist the flag State in fulfilling its responsibilities.

190. *The 1995 FAO Code of Conduct for Responsible Fisheries*. The Code is a voluntary instrument that, inter alia, establishes principles for responsible fishing and fisheries activities, taking into account all their relevant biological, technological, economic, social, environmental and commercial aspects, and promotes the contribution of fisheries to food security and food quality, giving priority to the nutritional needs of local communities. The Code also seeks to promote and facilitate structural adjustment in the fisheries sector so that fisheries are utilized in a long-term sustainable and responsible manner for the benefit of present and future generations. The Code is complemented by four international plans of action: the plan to prevent, deter and eliminate illegal, unreported and unregulated fishing; the plan for reducing incidental catch of seabirds in longline fisheries; the plan for the conservation and management of sharks; and the plan for the management of fishing capacity.

191. *Kyoto Declaration*. The Declaration and Plan of Action adopted by the International Conference on the Sustainable Contribution of Fisheries to Food Security in 1995 recognized the significant role played by marine fisheries, inland fisheries and aquaculture in providing food security for the world, both through food supplies and through economic and social well-being, and declared that the international community should base policies, strategies and resource management and utilization for sustainable development of the fisheries sector on specific requirements such as the maintenance of ecological systems, use of the best scientific evidence available, improvement in economic and social well-being, and inter- and intra-generational equity. To this end, the Declaration requested States, among other immediate actions, to assess and monitor the present and future levels of global and regional production and supply and demand of fish and fishery products and their effects on food security, employment, consumption, income, trade and sustainability of production, and to provide technical and financial assistance to developing countries, in particular low-income food-deficit countries and small island developing States, in order to achieve the contribution of fisheries to food security.

192. *Convention on Biological Diversity*. The Convention provides the international legal framework for the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of benefits arising from the utilization of genetic resources. In promoting the protection of ecosystems and natural habitats and the maintenance of viable populations of species in natural surroundings, the Convention also has a role in promoting sustainable fisheries. The Elaborated Programme of Work on Marine and Coastal Biological Diversity adopted by the Conference of the Parties to the Convention (see para. 150 above) contains several elements relevant to the achievement of sustainable fisheries.

(b) Regional conservation and management measures promoting the sustainable use of fishery resources

193. The international community places great importance on cooperation within regional fisheries management organizations and other arrangements for the regional conservation and management of fisheries resources. Since 1945, over 30 regional fisheries management organizations have been established in many regions of the world's oceans and seas to oversee governance of capture fisheries. Some organizations have only advisory capacity, while others have competency to regulate fishery resources. Nonetheless, all regional fisheries management organizations play a pivotal role in conserving and managing fisheries resources and in generally promoting responsible and sustainable behaviour in the fisheries sector.

194. Many regional fisheries management organizations have taken measures to enhance the contribution of fisheries under their management to sustainable development. A number of them consider that the new approaches to fisheries conservation and management, in particular the precautionary approach and ecosystem approach, are important in the management of fisheries resources, habitat protection and restoration (see also A/57/57, paras. 188 and 189).

195. Recognition of the importance of interactions between fishing activities and ecosystems, particularly the long-term impacts of fishing activities on ecosystems, including the adverse effects of removing large quantities of species from the marine environment, as target species or by-catch, as well as the physical impact of

fishing gear on critical habitats, has convinced a number of regional fisheries management organizations to apply an ecosystem approach to the management of fishery resources under their competency. However, concerns may arise as to how immediate social and economic factors can be taken into account in applying the precautionary approach and an ecosystem approach without undermining their effectiveness.[81]

196. In their reports to the Secretary-General, a number of organizations have provided information on their activities aimed at enhancing the contribution of fisheries to sustainable development. The secretariat of the Pacific Community has engaged over the reporting period in stock assessment, scientific monitoring and biological research on the regional tuna and billfish fisheries and in support to coastal fisheries. Its activities in support of oceanic fisheries include the monitoring of the exploitation levels of stocks of commercially important tuna and billfish species; assessing the status of these stocks; providing information on the biology and ecology of tunas, billfish and bait species; and assessing the interaction between different fisheries for oceanic species through the study of population dynamics. In addition, its support to coastal fisheries concentrates on support and advisory services towards the development of commercial fisheries and export opportunities for Pacific islanders, as well as on assessment and management of subsistence and artisanal fisheries and community-based management of fisheries. The Forum Fishery Agency has concentrated its activities during the reporting period in assisting member countries in the management and development of their tuna resources, including their interests in maximizing domestic benefits from sustainable use of their tuna resources. The Agency has also helped in the negotiation and implementation of regional agreements among its members and with distant-water nations. Furthermore, the newly established Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean, which is to promote sustainable management over short-term maximization of exploitation, will integrate the management of tuna fisheries in the exclusive economic zones of Pacific Island Forum countries with the currently unregulated high seas areas and other parts of the waters of western and central Pacific rim countries that are part of the geographical range of the Pacific highly migratory fish stocks.

(c) National policies promoting the contribution of fisheries to sustainable development[82]

197. The Johannesburg Plan of Implementation adopted at the World Summit on Sustainable Development[34] has stressed that States have the primary responsibility for achieving sustainable development. They are responsible for the identification of sustainable development priorities, orientation policies, implementation of national strategies, and measures to strengthen national institutions and legal frameworks. Thus, in relation to fisheries, States are urged to adopt measures that are conducive to improving governance of fisheries both on the high seas and in areas under national jurisdiction, so that the sector may contribute to global food security, economic prosperity and the well-being of national economies, including those in developing countries.

198. However, the weakness of the surveillance systems of some developing coastal States constitutes a major constraint. Indeed, limited resources and the large size of the ocean space over which they exercise jurisdiction have hampered these

countries' ability to enforce conservation and management measures against unauthorized fishing. Unauthorized fishing activities have been carried out through the use of flags of convenience, illegal fishing in the exclusive economic zone and on the high seas, and misreporting of catch. Developing coastal States dependent on access fees for their economic development are particularly vulnerable because of the effects of fee levels that are proportionate to the volume of catch.[43]

199. Consequently, coastal States in some regions have established a regional register of foreign vessels with a common database of all relevant information about vessels, updated annually, containing information about their owners, operators and masters, call sign and port of registry. The regional register is used not only as a source of information on fishing vessels, but also as a tool to ensure compliance with coastal States' laws and regulations. Coastal States have also taken additional measures, such as harmonization of the terms and conditions of access and adoption of agreements permitting a party to extend its fisheries surveillance and law enforcement activities to the territorial sea and archipelagic waters of another party (see A/57/57, para. 184).

200. In addition, many developing coastal States have now taken measures to improve the national legal and policy frameworks within which small-scale fisheries operate in view of the importance of this subsector for their economies, in order to enhance its contribution to food security and poverty alleviation. A number of strategies are being pursued to achieve these goals. Some strategies lie within the fisheries sector, and can be tackled by fisheries-specific initiatives, while others require action by planners, policymakers and practitioners in other sectors.

201. Strategies within fisheries include activities relating to: (a) data collection and research for strategy development; (b) reduction of vulnerability and ways to increase the added value of small-scale fishing activities; (c) resource allocation and management; (d) addressing trade-offs between short-term and long-term objectives and the impacts of different policies and strategies; and (e) measures aimed at improving governance. However, it should be borne in mind that the small-scale fisheries subsector is not homogenous within and across countries and regions and attention to this fact is warranted when formulating strategies and policies for enhancing its contribution to food security and poverty alleviation.

(i) Data collection and research for strategy development

202. In order to develop effective fisheries-specific strategies, there is a need to better measure and understand the causal factors of poverty in small-scale fishing communities. Such measures would demonstrate the validity of assistance to small-scale fisheries, not only because of levels of poverty in the sector, but also because of its current and potential contribution to food security and poverty alleviation at the local, regional and national levels as well as its contribution to the country's export revenues. It is also necessary to identify how many people are actually involved in small-scale fisheries as, without such knowledge, it is clearly impossible to measure the fisheries' real contribution to food security and poverty alleviation. Moreover, better data and information provide a better understanding of (a) the process by which people in small-scale fishing communities move in and out of poverty; (b) corresponding solutions in terms of *ex ante* risk management and *ex post* support; (c) the strategies required to increase the contribution of small-scale

fisheries to local and national food security and to poverty alleviation; and (d) how such strategies could be put into action.

(ii) Reducing vulnerability and increasing value

203. A number of actions can be taken to address vulnerability in small-scale fishing communities. Actions ought to be tailored to the source of such vulnerability; for example, vulnerability to natural disasters such as hurricanes can be reduced through preparedness programmes and early warning systems, while vulnerability to occupational hazards such as accidents at sea or health problems caused by food processing can be addressed through sea safety programmes and programmes aimed at reducing the health effects of fish smoking (e.g., improved ovens). Another strategy to reduce vulnerability in small-scale fishing communities is to officially recognize and enforce their rights to the fishery resources facilities and land they live on or use, whether they are sedentary or migratory. Other actions include the development of fishers' organizational capacity and the introduction of methods that facilitate their effective participation at local and national levels in decisions affecting the fisheries sector, their livelihoods and work conditions, in order to create a sense of ownership and accountability in the decision-making process.

204. Value added can be increased in small-scale fisheries through, inter alia, improved infrastructure and management of landing sites, storage facilities and market buildings; better information about markets; and enhanced processing and reduced post-harvest waste, including improved handling, processing and distribution of both by-catch and target species.

(iii) Resource allocation and management

205. Resource allocation and management may also be used to increase the contribution of small-scale fisheries to food security and poverty alleviation, particularly in overexploited stocks, by (a) improving the resource base through better resource management (e.g. reduction in destructive fishing practices) and stock rebuilding strategies (protected areas, restoration, stock and habitat enhancements); (b) allocating a greater share of resources to small-scale fisheries as opposed to industrial fisheries, including more explicit quota allocations to small-scale fisheries and the setting up of wider areas reserved for their exclusive use; (c) promoting the use of fish aggregation devices, where appropriate, to increase stock aggregation and accessibility in coastal areas; and (d) providing alternative livelihoods under effective governance structures so as to reduce pressure on overfished resources. Provision of alternative livelihoods can reduce poverty in fishing communities and allow stocks to recover. Stock recovery can then generate possibilities for increased supplies of fish for human consumption; enhanced earnings in small-scale fisheries; income and employment multipliers in fishing communities; and increased national export revenues from small-scale fisheries.

(iv) Addressing trade-offs and impacts of different strategies

206. Trade-offs, which imply consideration of the impacts of each strategy in terms of costs and benefits, need to be addressed when adopting improved policies, institutions and processes in the fisheries sector. Implicit in policy decisions

designed to combat food insecurity and poverty, trade-offs must be based on information from data collection and research.

207. Several types of trade-offs are frequently encountered. For example, what are the costs and benefits of reducing industrial fishing activity (with corresponding decreases in foreign exchange earnings) in favour of small-scale fisheries catches with increases in small-scale fishing profitability and multiplier effects? In other words, what are the effects of trading an increase in equity for a decrease in efficiency, which means changing the balance in the factors of production in favour of labour over capital inputs and may result in greater employment, but can reduce profitability? What are the costs and benefits of supporting export versus production for the national market? This means increased revenues for small-scale fisheries and enhanced foreign exchange earnings for the Government, but may lead to a decrease in the availability of fish for sale in local markets and may have important effects on the distribution of poverty and food security. What are the costs and benefits of supporting foreign or local fisheries for enhanced national income? This may bring increased licensing revenues and royalty payments from foreign fishing fleets, or increased export earnings from national semi-industrial or industrial fleets, but may result in lesser fish catches for small-scale fisheries, with implications for food security and poverty alleviation. What are the costs and benefits of adopting short-term initiatives to reduce poverty and improve food security, such as credits or subsidies to small-scale fisheries, which could have an adverse impact on long-term sustainability of the fisheries sector (e.g., overexploitation, falling catches and declining profitability)?

(v) *Improved governance*

208. Improved governance is critical to the success and effectiveness of any strategy to enhance the contribution of small-scale fisheries to food security and poverty alleviation. It requires inclusiveness (empowerment and decentralization); lawfulness (enforcement of fisheries laws and regulations, elimination of legislation and practices considered to be detrimental to small-scale fisheries and conflict resolution between resource users); and transparency and accountability (accountability of all fishery governing structures, anti-corruption measures, access to information, and participatory monitoring and evaluation of initiatives aimed at supporting small-scale fisheries).

3. Factors limiting the contribution of fisheries to sustainable development

209. The United Nations Conference on Environment and Development identified a number of factors considered to be major hindrances to the contribution of fisheries to sustainable development. These factors reduce the ability of fisheries to contribute to economic development, poverty alleviation and food security, while increasing the risk of ecosystem degradation.

High seas fisheries

210. The Conference indicated that the management of high seas fisheries is inadequate in many areas and some resources are overutilized. Agenda 21 pointed out that the main problems affecting high seas fisheries are unregulated fishing, overcapitalization, and excessive fleet size, vessel reflagging to escape controls, insufficiently selective gear, excessive by-catch, lack of enforcement of

conservation measures, unreliable databases and lack of sufficient cooperation between States.[84] Most of these issues arise from the open access nature of high seas fisheries, which encourages "free riders" and "bad actors" in ocean fisheries, does not favour meaningful cooperation among States, and prevents an effective management of high seas fisheries. Yet, without effective management, fisheries resources tend towards overexploitation and depletion, inhibiting possibilities for sustainable development.

211. A broader issue undermining the sustainability of high seas fisheries is the absence of a consensus on the nature of the duty to cooperate under international law for the conservation and management of high seas fisheries. Limits on harvesting agreed upon within regional fisheries management organizations can be easily undermined by non-contracting parties, whose vessels fish without restraint because the flag States are not parties to the organizations or arrangements which imposed the limits. By ignoring the regional organization's regulations, these States not only undermine the objective pursued by the parties, namely conservation and sustainable use of the managed fisheries, but also derive an indirect benefit from the reduction in the general fishing effort in the areas concerned.[85]

Fishing in areas under national jurisdiction

212. Many fisheries conducted in areas under national jurisdiction, including small-scale fisheries, are facing difficulties relating to local excess fishing capacity, unauthorized incursions by foreign fleets in violation of the sovereign rights of the coastal State under articles 56, 61 and 62 of UNCLOS, ecosystem degradation, undervaluation of catch, excessive by-catches and discards, and increasing competition between artisanal and large-scale fishing and between fishing and other types of activities.[86] The absence of controls on the overall fishing effort and the fishing practices of local fishers and foreign fishing vessels, prompted by the inadequacy of monitoring, control and surveillance, is the root cause of such unsustainable fishing practices. These practices have adverse effects on the sustainable development and conservation of fishery resources and the economies and food security of coastal States, particularly developing coastal States.

213. In addition, concerns have been expressed over the last one or two decades about fisheries' role in sustainable development owing to the prevalence of unsustainable fishing practices and human-induced changes in the ecosystem. Some fishery bodies advising developing coastal States in the conservation and management of resources under national jurisdiction have expressed concern over the increase and globalization of fish trade and the possible negative effects of foreign access agreements on conservation, local supplies and equity. These organizations have advised their member States to take progressive management measures in access regulation rather than wait for the fisheries to be overexploited. They also stress the need for consultations with all stakeholders in the sector to regulate access and manage fishing capacity through protocols and consultation mechanisms.

Overfishing

214. The FAO report on the state of world fisheries and aquaculture in 2002 indicated that the number of underexploited and moderated exploited fisheries resources, represent 25 per cent of the major fish stocks and continue to decline

slightly; 47 per cent were fully exploited and thus had reached their maximum sustainable limits; 18 per cent were reported as being overexploited without any prospect for expansion or increased production; and the remaining 10 per cent were considered to be significantly depleted.[87] An earlier report stated that the global shortfall of fish caused by the depletion of fisheries, expected to increase considerably over the next decades, would pose a major threat to the food supply of millions of people (see A/53/456, paras. 261-263).

Illegal, unreported and unregulated fishing

215. Illegal, unreported and unregulated fishing has been reported in various regions of the world, either on the high seas or in areas under the national jurisdiction of coastal States. This type of fishing has adverse effects on the conservation of fishery resources, economies and food security of coastal States, particularly developing coastal States, and is routinely associated with unsustainable fishing practices on the high seas (see A/54/429, paras. 249-257).

Constraints on small-scale fisheries

216. Small-scale fishing communities are vulnerable to many external factors contributing to poverty, including economic factors such as market price fluctuations and variable access to markets, as well as climatic and natural events such as yearly seasonal fluctuations in stock abundance, poor catches, bad weather, natural disasters including cyclones and hurricanes, and the dangers of working at sea.[88] The severe impact of the recent tsunami disaster in South-East Asian coastal communities, which caused loss of income generation and livelihood for many fishing communities of several States in the Indian Ocean, is a harsh reminder of the catastrophic consequences of such natural events.

217. Governance and policy issues associated with access to and control over aquatic environment and resources may also constrain small-scale fisheries. Access control and distribution issues are often linked with competition from industrial and foreign interests. Additional constraints include lack of access to capital, limited alternative employment opportunities and a lack of appropriate technology. Such constraints can reduce the ability of those fisheries to contribute to food security and poverty alleviation.[89]

218. Conflicts between small-scale and industrial fishing activity may originate from governance and policy issues, such as inadequate enforcement capability or a lack of will for enforcement, or preferential treatment given to industrial fisheries. Examples of such preferences include long delays in processing complaints about incursions of industrial vessels into small-scale fishing areas, exclusion of small-scale fishers from fishing grounds, subsidies to industrial fisheries, and the payment by industrial fishing interests of arbitrary, informal incentives to obtain access to resources or markets.[90] In some regions, inshore fishing by industrial vessels, especially trawlers, besides competing with artisanal fisheries, has had an adverse impact on nearshore marine environment, by forcing artisanal fishers to work in ever-shrinking areas of shallow water and to fish for juveniles in coastal nursery areas.[91] The two fisheries may also be in conflict in the market to the extent that they catch the same species of fish. Mass landings of large-scale fisheries may depress fish prices and make small-scale fishers increasingly uncompetitive. While this may seem to be an economically efficient process, in that the more efficient

(low-cost) industrial producers displace the marginal (high cost) small-scale producers, the outcome may be neither efficient nor equitable because (a) it creates distortions and imperfections in the capital market; (b) it is a socially unacceptable distribution of income; and (c) it ignores the lack of alternative employment opportunities for displaced fishers.[92]

219. These conflicts show the importance of improving policies, institutions and processes and orienting them towards the reduction of the vulnerability of small-scale fishers and defending their rights. They also demonstrate the need for the appropriate authorities to make explicit choices between trade-offs in policy decisions when, for instance, they decide to maximize food security and poverty alleviation.

220. Additional constraints on small-scale fishers are their lack of geographical and occupational mobility. A limited fishing range due to lack of technological development prevents them from fishing seaward while the lack of alternative employment, already referred to above, limits their exit from fisheries, making them particularly vulnerable to encroachment from both land and sea. Thus, small-scale fishers are often faced with a "mouse-trap" constraint: entry is relatively easy and not very costly, but exit is difficult for a variety of reasons ranging from chronic indebtedness to lack of alternative employment outside the fishery.[93] In many developing countries, fishing is viewed as the employment of last resort: people fish when farming is not feasible.[94]

221. Moreover, many fishing techniques used by small-scale and artisanal fishers on reefs, such as dynamite fishing, drive netting and poison fishing, have adverse impacts on the abundance of fishery resources and the health of related ecosystems in tropical environments. They may result in overfishing of coastal fish species and invertebrates as well as an irreversible depletion of reef species, in view of the crucial role of coral reefs as spawning grounds and habitats for invertebrates and fish.[95] Although these practices are officially banned, they often persist because the people involved have little, if any, alternative livelihood.[96]

Environmental issues linked to aquaculture

222. Experts believe that although aquaculture may appear to be more sustainable than capture fishing, the industry needs to address the adverse ecological effects of methods used in the production of farmed fish on the marine environment, wild fisheries and human health.[97]

4. Capacity-building activities of international organizations promoting sustainable fisheries

223. In recognition of the importance of fisheries in the sustainable development of developing countries, a number of competent international organizations have extended technical and financial assistance to these countries in the form of capacity-building activities designed to enhance the role of fisheries, particularly small-scale fisheries, in combating poverty and improving food security.

224. FAO, as the United Nations agency competent in fishery issues, is engaged in many activities promoting the contribution of fisheries to sustainable development. Most of these activities are undertaken through the implementation of the Code of Conduct for Responsible Fisheries and related international plans of action. FAO

has provided technical assistance to developing countries in the field of participative approaches to fisheries management, complemented by the development of appropriate institutional frameworks. It also established guidelines of key indicators for socio-economic and demographic issues, problems and opportunities in fishery resource management, and for monitoring the impact of management measures on the socio-economic well-being of coastal and fishing communities. FAO has identified and disseminated information on available tools for effective management of small-scale fisheries, and has addressed the issue of access rights to fisheries resources in small-scale fisheries.

225. Since 1999, FAO has implemented the United Kingdom-funded Sustainable Fisheries Livelihood Programme to assist 25 West African countries in reducing poverty in coastal and inland fisheries communities through the improvement of their livelihoods. The Programme intends to reach its objectives through (a) the development of social and human capital in fisheries-dependent communities; (b) the enhancement of the natural assets of these communities; and (c) the development of appropriate policy and institutional environments. The Programme expects to achieve a lasting impact on governance at the central and local levels, and on policy formulation and execution at the national level.

226. Other activities to enhance the contribution of fisheries to sustainable development include assistance to Nigeria and Malawi to improve the access of their fisheries institutions to information and documentation on the management of fisheries and aquaculture; training of personnel in Viet Nam and the Islamic Republic of Iran in the collection of marketing information and preparation of market reports; preparation and dissemination of fisheries manuals on the Atlantic coast of Nicaragua; workshop on the development of a national strategy for fisheries management and development in Viet Nam; workshops and seminars on fish and fish products safety and quality, in Bremen (Germany), in Spain for the Mediterranean countries, in Pakistan, Viet Nam, the Islamic Republic of Iran, Bulgaria and China and in Bangladesh for South and South-East Asian countries; expert consultation on the role of small-scale fisheries in poverty alleviation and food security; programmes to enhance capacity-building to combat illegal, unreported and unregulated fishing, including assistance in the development and implementation of national plans of action, and assistance to countries such as Senegal and Thailand, and organizations such as the West African Subregional Fisheries Commission and the Latin American Organization for the Development of Fisheries in addressing the implementation of the international plan of action for the management of fishing capacity (see para. 190 above).

227. The United Nations Development Programme Global Environment Facility (GEF) in cooperation with other donors has provided financial assistance to projects addressing sustainable management of marine fisheries in developing countries and in countries with transition economies. One of these projects, relating to the implementation of the strategic action programme of the Pacific small island developing States, supported the negotiations leading to the conclusion of the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean, which entered into force in 2004. A project on the reduction of environmental impact from tropical shrimp trawling through the introduction of by-catch reduction technologies and change of management, with the participation of countries in Africa, Latin America, the Caribbean and South Asia, addresses destructive fishing techniques. Other

initiatives address the issue of overfishing, and promote the development of an ecosystem approach to fisheries management, using large marine ecosystems as management units. They include the project for combating living resource depletion and coastal degradation in the Guinea Current large marine ecosystem through ecosystem-based regional actions, with the participation of 16 West African countries and several organizations and donors; the strategic partnership for sustainable fisheries in the large marine ecosystems of sub-Saharan Africa; the strategic partnership for the Mediterranean large marine ecosystem; and the preparation of a transboundary diagnostic analysis and preliminary framework for the Bay of Bengal large marine ecosystem.

228. The Commonwealth secretariat has implemented a work programme focusing on the development of coastal fisheries conducted as small to medium enterprises. The programme has been motivated by the fact that an increasing number of Commonwealth developing coastal States experience serious overexploitation of their coastal fisheries resources due to a rapid shift from subsistence to commercial fishing. Projects aim to assist in the development of institutional capacity in member countries and to train fisheries business owners to adapt and incorporate the profit motive of business in national strategies on sustainable management and development of coastal fisheries resources.

229. The United Nations University has been involved in capacity-building activities in the fisheries sector. The University's Fisheries Training Programme, in cooperation with several Icelandic research institutions, has conducted postgraduate training courses for developing countries in Iceland in the following fisheries-related fields: fishery policy and planning, marine and inland water resource assessment and monitoring, quality management of fish handling and processing, fishing technology, management of fisheries companies and marketing, and environmental assessment and monitoring.

5. Conclusions

230. Fisheries can play an important role in the world economy and contribute to sustainable development if they are managed responsibly, so as to provide current generations with food, employment, recreation and trade without compromising the ability of future generations to meet their own needs. The contribution of small-scale fisheries to poverty alleviation and food security in many countries, particularly developing countries, should be fully acknowledged. However, for fisheries to contribute to sustainable development, Governments have to develop innovative measures to address a number of issues that stand in the way of achieving this goal. These are the problems of overfishing, illegal, unreported and unregulated fishing and unsustainable fishing practices, which are linked to larger issues of oceans governance on the high seas and in areas under national jurisdiction, as well as flag States' responsibilities and coastal States' capabilities.

231. It is of particular importance to provide financial and technical assistance to developing countries to improve management of the living marine resources in areas under their national jurisdiction. Measures should include efforts to reduce the many sources of vulnerability in small-scale fishing communities. Among these, particular attention should be given to the improvement of the legal and policy framework within which small-scale fisheries operate, in order to enhance their contribution to food security and poverty alleviation.

B. Marine debris

232. The information in this chapter is to a large extent extracted from the feasibility study on sustainable management of marine litter[99] that was prepared by UNEP in consultation with a number of United Nations and other intergovernmental organizations, as well as non-governmental organizations, who have experience in issues related to marine litter. The study was submitted to the sixth Global Meeting of the Regional Seas Conventions and Action Plans, held in Istanbul from 30 November to 2 December 2004.

1. General

233. Marine debris, also referred to as marine litter, is any persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine and coastal environment. Marine debris may be found near the source of input, but can also be transported over long distances by ocean currents and winds. As a result, marine debris is found in all sea areas of the world — not only in densely populated regions, but also in remote places far away from any obvious sources. Generally speaking, urban debris is predominant in the vicinity of large cities, while ship-generated debris is a major contributor on remote coastlines.[99]

234. There are no recent and reliable figures on the amount of marine debris worldwide. Furthermore, comparisons of the accumulation of marine debris among locations is complicated by differences in the intensities and periods of study and the methods of classifying debris and beach substrate.[100] Some calculations estimate that eight million items of marine debris enter oceans and seas every day.

235. Marine debris has become an increasing problem in recent times. Most marine litter consists of material that degrades slowly, if at all, so that a continuous input of large quantities of these items results in a gradual build-up in the coastal and marine environment. In the last few years, the issue of marine debris has been mentioned in a number of General Assembly resolutions, evincing the growing concern of the international community about this problem.[101]

2. Sources of marine debris

236. A variety of land-based and marine activities result in the introduction of debris into the marine environment. It is generally acknowledged that land-based sources account for 60 to 80 per cent of marine debris. But the main source of marine debris may differ from region to region and from country to country.

237. *Main land-based sources of marine debris*. Land-based sources are extremely widespread, and include recreational beach-goers and fishers; materials manufacturers, processors and transporters; shore-based solid waste disposal and processing facilities; sewage treatment and sewer overflows; inappropriate or illegal dumping on land; and public littering.[102] Debris can be blown, washed, or discharged into the water from land areas. A major source is sewer overflows and sewage treatment plants. When run-off from seasonal precipitation exceeds the handling capacity of the sewage treatment facility, materials can bypass treatment systems and enter waterways. Legal and illegal shore-based solid waste management practices, both in coastal areas and along inland waterways, also contribute to the problem of marine debris.

238. Natural phenomena can also have a role in the creation of marine debris. In addition to causing tremendous loss to human life and property, the Indian Ocean tsunami created enormous amounts of debris that ended up in the marine environment. Debris can provoke further physical damage to already damaged vulnerable ecosystems.[103]

239. *Main sea-based sources of marine litter.* Accidental, deliberate or routine discharges or dumping from ships, pleasure craft, fishing vessels and offshore oil and gas platforms are among the main sea-based sources of marine debris. It is estimated that shipping contributes 10 to 20 per cent of the world's marine debris. Larger vessels with many people on board typically generate considerable amounts of waste. It is estimated that from 1.4 to 2.5 kg of wet garbage and 0.5 to 1.5 kg of dry garbage is produced per person, per day on medium-sized ships.[104] Similarly, offshore oil and gas platforms and offshore supply vessels can generate debris both from daily operations and from the crew. In the absence of appropriate treatment facilities on board and reception facilities on land, waste may be dumped intentionally. Cargo washed overboard can also constitute marine debris.

240. *Fishing gear and related marine debris.* Commercial fishing activities introduce marine debris into the ocean through accidental loss of fishing gear or through intentional disposal of worn-out gear.[105] It is estimated that 30 per cent of all marine debris originates from the fishing industry. Debris items originating in fisheries activities include nets, monofilament lines and ropes, salt treatment bags, bait boxes and bags, fish baskets or totes, fish and lobster tags and trawl floats. Due to the resistance of modern synthetics to degradation, it is believed that some derelict fishing gear continues to circulate with the currents for years or decades, until it ends up on shallow reefs, banks or beaches, eventually degrading.[106] This type of marine debris has been identified as the most biologically threatening of the debris categories.[107]

3. Effects of marine debris

241. Marine debris is a visible sign of human impact on the marine environment and a source of public concern, as it causes environmental, economic, health and aesthetic problems.

242. *Human health and safety.* Items such as broken glass, medical waste, ropes and fishing lines pose a threat to human safety. The presence of litter can also indicate more serious water quality concerns that affect human health. Swimmers, divers and snorkelers can become entangled in submerged or floating debris. Medical and personal hygiene debris that enters the waste stream through direct sewage outflows or inadequate sewage treatment systems can indicate the presence of invisible pathogenic pollutants and other bacterial contamination that could cause serious illnesses.[108]

243. *Effects on tourism and other economic activities.* Marine debris has repercussions on coastal economic activities, particularly tourism. Whether deposited on beaches, on the seabed or floating in coastal waters, stranded materials can pose risks to human health and cause aesthetic deterioration of beaches and coastal waters, thus affecting tourism with resulting loss in revenues. It is also expensive to clean up. New Jersey spends $1.5 million annually to clean up its beaches and $40,000 to remove debris from the New York/New Jersey harbour.[109]

244. *Navigation*. Marine debris can also be a navigational hazard. For example, derelict fishing gear in the form of nets and ropes, invisibly floating just below the water's surface, can entangle vessel propellers and rudders. One of the most common causes of burned-out water pumps in recreational boats is plastic bags clogging and blocking water intake valves. Repairs can be costly and result in a significant loss of operational time. It has been estimated that the Japanese fishing industry spent $4.1 billion on boat repairs in 1992.[110]

245. *Effects on marine species*. A review of the effects of marine debris on marine wildlife indicates that at least 267 species of marine wildlife are affected by debris.[111] Entanglement and ingestion are the primary kinds of direct damage to wildlife caused by marine litter. Species affected by entanglement and ingestion mostly include sea turtles, seabirds and marine mammals. Debris can cause amputations or increased vulnerability to predators due to impeded movements. Heavy, large plastic sheets and other large debris smother or trap benthic-dwelling animals and drown those that must rise to the surface to breathe. Ingestion incidents may lead to suffocation or digestive problems. Ingestion of solid waste can bring about irritation and damage to the digestive tract as well as disruption of normal feeding patterns, causing some animals to stop eating and slowly starve to death. Even at low levels, ingestion can interfere with gut function and metabolism, and may have toxic effects.

246. *Habitat destruction and alien species introduction*. Other threats to wildlife and the environment from marine litter include physical damage, such as covering of coral reefs, smothering of seagrass beds and other seabed ecosystems, and disturbance of habitats from mechanical beach cleaning. Marine litter is also increasingly believed to be a source of accumulation of toxic substances in the marine environment, and environmental changes due to the transfer and introduction of invasive species. In fact, marine debris drifting on ocean currents may eventually become home to entire communities of potentially harmful, non-native organisms which can be carried to the far corners of the oceans.

247. *Fisheries*. Marine debris may put additional pressure on already stressed commercial fish stocks. Marine debris, including debris originated from fishing activities, is an important cause of by-catch. Problems associated with marine debris include "ghost fishing" (the entanglement of fish and marine mammals in lost fishing gear) by lost gill nets, bottom longlines and other passive gear such as traps and pots. Studies conducted in the Atlantic Ocean suggest that discarded gear may be responsible for significant losses of some commercially valuable fish and crab species (see A/59/298, para. 81). Marine debris may also have a considerable impact on coral reefs and seagrass beds,[112] which have been recognized as important spawning and nursery grounds for fish. Furthermore, plastics and sewage-related debris have been identified as the two major types of litter interfering with fishing gear. Inconvenience and economic loss can be caused by the need to clean debris entangled in nets, reduction in the effectiveness of gear, the impairment of static fishing gear and the blockage of trawls by dense litter.[113]

4. Measures to prevent and reduce marine debris

248. Because marine debris comes from both land- and sea-based sources, measures to prevent or reduce marine debris in the marine and coastal environment have to be taken in many areas, within many activities and by many actors. A distinction can be

made between measures that are aimed at preventing and reducing marine debris at source and those that are taken to deal with debris once it is found in the marine and coastal environment.

249. Measures to prevent and reduce marine debris include (a) better waste management on land and at sea, including through improved recycling of materials and the development of more degradable packaging materials; (b) effective implementation and enforcement of international instruments; (c) improvement of port reception facilities; and (d) improvement of education and awareness-raising activities to influence behaviours.

(a) Waste management

250. The most effective way of reducing marine debris is by diminishing the generation of waste on land and from ships, fishing vessels, pleasure craft and offshore platforms, for example by reusing and recycling materials. Once generated, waste must be collected and taken care of in an environmentally sound manner, either for reuse, recycling or safe disposal. The development of degradable materials might help decrease the total amount of persistent plastics in the marine and coastal (and terrestrial) environment. However, developing more "litter-friendly" materials should not send the signal that contaminating the environment with "litter-friendly" waste is considered acceptable. Efforts to enhance land-based waste management should include the proper management by municipalities of landfills and sewage treatment facilities. Moreover, recreational areas such as beaches and camping grounds should be sufficiently equipped with waste bins to cater for the needs of visitors. Education, information and training are vital components in such efforts towards more effective waste management.

251. Large vessels and offshore platforms should have waste management plans, and preparations for proper waste management should be made in advance by those on-board smaller vessels and pleasure craft. For example, in 2001, members of the International Council of Cruise Lines adopted cruise industry waste management practices and procedures and committed themselves to: implementing a policy goal of zero discharges of MARPOL annex V solid waste products (garbage) by use of more comprehensive waste minimization procedures to significantly reduce shipboard generated waste, and to expanding waste reduction strategies to include reuse and recycling to the maximum extent possible so as to land ashore even smaller quantities of waste products. Waste generated at sea should be stored on-board and discharged ashore in a proper reception facility, unless the discharge of the material in question into the marine environment is permitted under MARPOL (see para. 254 below).

(b) Legal instruments

252. Marine debris is not always specifically mentioned in international legal instruments. However, when these instruments include, for example, requirements to decrease or eliminate the discharge of ship-generated waste, or measures to stop the discharge of solid waste from land-based sources, or action to reduce the loss of fishing gear from fishing vessels, the issue of marine debris is implicitly covered. For example, the conventions on the protection and conservation of the marine and coastal environment adopted under the UNEP Regional Seas Programme and partner programmes regulate various sources of pollution and thus generally support the

prevention and reduction of marine debris, even when the issue is not specifically addressed. Some regions have gone a step further and adopted specific protocols on the protection of the marine environment against pollution by land-based sources or by dumping, providing a more targeted approach to the problem of marine debris.

(i) *UNCLOS*

253. Part XII of the Convention sets out the duties of States to protect and preserve the marine environment. UNCLOS requires States to take, individually or jointly as appropriate, all measures necessary to prevent, reduce and control pollution of the marine environment from any source, using for this purpose the best practicable means at their disposal and in accordance with their capabilities. States have a duty not to transform one form of pollution into another and not to introduce alien or new species which may cause harm to the marine environment. States are required to develop international rules and standards for the prevention of pollution from land-based sources and take these into account when adopting national laws and regulations. They are also required to develop international rules and standards for the prevention of pollution by dumping and from vessels, and to implement and enforce them at the national level. These international rules and standards represent the minimum standards for flag States. They can be enforced against a foreign vessel by a coastal State and also by a port State where there has been a discharge violation. Coastal States may adopt and enforce stricter rules and standards for the prevention, reduction and control of pollution from vessels in accordance with article 211. UNCLOS also requires coastal States to develop, implement and enforce international rules and standards for the prevention, reduction and control pollution of the marine environment from artificial islands, installations and structures.[114]

(ii) *MARPOL*

254. The international rules and standards for the prevention, reduction and control of pollution from vessels referred to in UNCLOS are mainly contained in MARPOL, which regulates discharges from ships in six annexes (see para. 115 above). The discharge of garbage is regulated by annex V, which applies to all ships, including fishing vessels and pleasure craft, unless expressly provided otherwise. The disposal of plastics (including fishing nets and gear) anywhere into the sea is prohibited, and discharges of other garbage from ships into coastal waters and MARPOL Special Areas is severely restricted. Foreign ships may be inspected in ports in cases where there are clear grounds for believing that the master or crew are not familiar with the essential shipboard procedures relating to the prevention of pollution by garbage, and to inspect the garbage record book. All parties to MARPOL are obliged to provide adequate reception facilities for ships calling at their ports. This requirement is especially necessary in the Special Areas where, because of the vulnerability of these areas to pollution, more stringent discharge restrictions have been imposed. The Special Area requirements have not taken effect in the Black Sea, Gulfs, Mediterranean Sea, Red Sea and the wider Caribbean areas, as defined in MARPOL, because of a lack of adequate reception facilities.

255. The disposal of garbage is prohibited from fixed or floating platforms engaged in the exploration, exploitation and associated offshore processing of seabed mineral resources, and from all other ships when alongside or within 500 metres of such platforms.

256. In order to assist States in the implementation of annex V, IMO has adopted guidelines for the implementation of annex V (resolution MEPC.59(33) as amended by resolution MEPC.92(45)), a standard specification for shipboard incinerators and guidelines for the development of garbage management plans (MEPC/Circ.317). An appendix to annex V provides a standard form for a garbage record book.

(iii) London Convention

257. The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972, governs worldwide any dumping at sea of wastes and other matter from vessels, aircraft, platforms, etc. and, from this perspective, prohibits the disposal at sea of, inter alia, persistent plastics and other persistent synthetic materials. The London Convention adopts a "black and grey list" approach, by which dumping of black-listed materials is prohibited and dumping of grey-listed materials is allowed provided a special authorization from a designated national authority is given. All other material or substances may be dumped after a general permit has been issued. It will soon be replaced by the 1996 Protocol, which prohibits all dumping except for a list of non-hazardous materials that may be dumped only if they pass an environmental assessment. Neither the London Convention nor its 1996 Protocol cover the disposal at sea of wastes derived from the normal operation of vessels.

(iv) Basel Convention

258. The Basel Convention establishes a notification and consent system among parties for transboundary shipments of "hazardous" and "other" wastes (as defined in article 1 of the Convention) and prohibits trading in covered wastes with non-parties. Parties are also required to minimize waste volumes and to ensure the availability of disposal facilities for the environmentally sound management of hazardous and other wastes. The Basel Convention could therefore be applicable to land-based marine debris. Some non-hazardous land-based marine litter would also fall under the scope of the Basel Convention under the categories of wastes requiring special consideration (e.g. wastes collected from households). Solid plastic waste would not generally be considered as a covered waste, unless it exhibits any hazardous characteristics as identified in annex III to the Convention and is listed under annex IX, list B.

(v) Convention on Biological Diversity

259. One of the main goals of the Convention on Biological Diversity is the conservation of biological diversity. Some of its provisions are therefore relevant to the problem of marine debris and its impacts on marine biological diversity.[115] In the context of the Jakarta Mandate on Marine and Coastal Biodiversity, the issue of marine litter is considered within the activities dealing with land-based and marine pollution. This issue is particularly relevant for the thematic areas on marine and coastal living resources (smothering of the seabed, and the effects of entanglement and ingestion of litter on fish, marine mammals and seabirds), and alien species (litter as a vector for transport of species).[116]

(vii) *Agreement on the Conservation of Albatrosses and Petrels*

260. Under the Agreement, an instrument negotiated under the Convention on the Conservation of Migratory Species of Wild Animals, the problem of marine debris is specifically referred to in the action plan contained in annex II. Section 3.3 of the action plan, on pollutants and marine debris, provides that the parties shall take appropriate measures, within environmental conventions and by other means, to minimize the discharge from land-based sources and from vessels of pollutants that may have an adverse effect on albatrosses and petrels either on land or at sea.

(viii) *FAO Code of Conduct for Responsible Fisheries*

261. The 1995 Code is a voluntary instrument aimed at everyone working in and involved with fisheries and aquaculture, irrespective of whether they are located in inland areas or in the oceans.[117] It generally requires that fishing be conducted with due regard to the protection of the marine environment. Therefore, the Code contains a number of provisions related to marine debris. It requires States to take appropriate measures to minimize waste, discards and catch by lost or abandoned gear. In this regard, the Code says that States should cooperate to develop and apply technologies, materials and operational methods that minimize the loss of fishing gear and the ghost fishing effects of lost or abandoned fishing gear (article 8.4.6). The Code also includes provisions on the minimization and treatment of garbage on fishing vessels (articles 8.7.2-8.7.4).

(viii) *Global Programme of Action for the Protection of the Marine Environment from Land-based Activities*

262. The Global Programme of Action (GPA) provides guidance to national and regional authorities for devising and implementing sustained action to prevent, reduce, control or eliminate marine degradation from land-based activities. Litter is one of the nine pollution source categories identified in GPA. Sewage is also identified as a pollution source, and at present the issue of municipal wastewater management is a priority in the implementation of GPA.

263. GPA sets a number of objectives in relation to marine litter, including (a) establishing controlled and environmentally sound facilities for receiving, collecting, handling and disposing of litter from coastal area communities; and (b) significantly reducing the amount of litter reaching the marine and coastal environment by preventing or reducing the generation of solid waste and improving its management, including through the collection and recycling of litter.

264. In order to achieve these objectives, national actions, policies and measures should focus on reducing the generation of solid wastes, installing garbage containers for citizens in public areas for the purposes of appropriate collection and recycling, establishing and properly operating solid waste management facilities onshore, launching awareness and education campaigns for all stakeholders on the need to reduce waste generation and to dispose of and reuse waste in environmentally sound ways, improving local planning and management capacity to avoid location of waste-dump sites near coastlines or waterways and to avoid litter escape to the marine and coastal environment, improving management programmes in small rural communities to prevent the escape of litter into rivers and the marine and coastal environment, and establishing campaigns and permanent services for collecting solid wastes that pollute coastal and marine areas.

265. Regional actions should include the promotion of regional cooperation for the exchange of information on practices and experiences regarding waste management, recycling and reuse and cleaner production, as well as regional arrangements for solid-waste management. International actions should include participation in a clearing house on waste management, recycling and reuse and waste-minimization technologies, and cooperation with countries in need of assistance, through financial, scientific and technological support, in developing and establishing environmentally sound waste-disposal methods and alternatives to disposal.

(b) *Agenda 21 and the Johannesburg Plan of Implementation*

266. Chapter 21 of Agenda 21 addresses the issue of solid waste, underlining that environmentally sound waste management encompasses safe disposal or recovery but also the root cause of the problem, such as unsustainable production and consumption patterns. Chapter 17, in paragraphs 17.24 to 17.27, focuses on actions to address the problem of pollution from land-based activities. Paragraph 17.30 (d) calls upon States to facilitate the establishment of port reception facilities for the collection of oily and chemical residues and garbage from ships, especially in MARPOL Special Areas, and to promote the establishment of smaller scale facilities in marinas and fishing harbours.

267. Paragraph 22 of the Johannesburg Plan of Implementation deals with the prevention and minimization of waste and the maximization of reuse and recycling and the use of environmentally friendly alternative materials. Paragraph 32 deals with land-based sources, emphasizing the importance of the implementation of GPA, and paragraph 33 deals with marine pollution from shipping, stating that relevant international conventions should be ratified and implemented.

(c) Reception facilities

268. The provision of adequate reception facilities in all ports, including marinas and fishing harbours, for the mandatory discharge of wastes is of central importance for achieving a reduction in ship-generated waste. Indeed, the major obstacle to the better implementation and enforcement of MARPOL is the lack of or insufficient number of reception facilities in many ports worldwide. It is a particularly acute problem for small island developing States, whose ports are frequently visited by cruise ships.

269. It is necessary to address the economic, as well as the technical aspects of this issue if the problem relating to reception facilities is to be satisfactorily resolved. What is required are major investments in infrastructure in ports in many parts of the world, as well as sound management of the waste once it has been delivered ashore. IMO has developed a comprehensive manual on port reception facilities and guidelines for ensuring the adequacy of reception facilities. It has also provided technical assistance to a number of countries, with a view to bringing into effect the Special Area status under MARPOL.

270. Where adequate port waste reception facilities exist, ships should not be deterred from discharging waste to port reception facilities by high costs, complicated procedures, undue delays in ports, unnecessary paperwork, excessive sanitary regulations, customs regulations or other impediments. For example, members of the Baltic Marine Environment Protection Commission do not charge a

special fee for the reception of ship-generated waste. The cost of receiving waste is included in the overall port or harbour fee.[111]

(d) Raising awareness

271. Marine debris is not only an environmental problem that can be solved solely by means of legislation, law enforcement and technical solutions; it is also a cultural problem and has to be addressed as such, by efforts to change attitudes, behaviours and management approaches, education and the involvement of all sectors and interests, including the public at large. Initiatives such as the convening of international conferences on marine debris and the study prepared by UNEP with other organizations (see para. 232 above) help to raise awareness at the global and regional levels.

272. In order to educate and inform people and make them feel that they can be part of the solution and not only part of the problem, regular clean-up operations are carried out in many countries throughout the world. These activities should be encouraged and supported.

5. Measures to deal with existing marine debris

273. Measures to deal with existing marine debris include clean-up operations on beaches and the sea-bed and projects to allow fishing vessels to leave marine debris caught in fishing gear ashore without having to pay a garbage fee. Regular clean-up operations are carried out in many countries throughout the world. In most cases, the work is done by local authorities, volunteers or non-governmental organizations. Examples of global clean-up operations include the International Coastal Clean-up and Clean Up the World. The costs of clean-ups can be significant. In 1998, 64 local communities in the North Sea region reported that they had to spend about $6 million annually on cleaning their beaches in order to maintain their recreational and aesthetic values and keep them safe for beach-goers.

6. Conclusions

274. Despite efforts made at the global, regional and national levels, there are indications that the marine debris problem continues to intensify. Inadequate waste management and deficiencies in the implementation and enforcement of existing international, regional and national regulations and standards that could improve the situation, combined with a lack of awareness among the main stakeholders and the general public, are the major reasons why the marine debris problem not only persists, but appears to be increasing worldwide.

275. Environmentally sound waste management practices are essential to the prevention and reduction of marine debris. Once generated, marine debris should be collected and disposed of appropriately. Costs can be reduced through the organization of joint clean-up operations among States in the same region. But it is also important to involve all stakeholders. Collection programmes could provide incentives. For example, Governments could create a subsidized buy-back scheme for old fishing nets to provide a financial incentive for the fishers to collect these nets.[114]

276. The aforementioned legal instruments provide a legal framework for the prevention and reduction of marine debris. More effective implementation and

enforcement of the existing international instruments are needed. Effective implementation can be further facilitated through the issuance of guidelines, for example, for tourism, boating and other sectors, as well as the publication of information on good waste management practices.

277. To address the problem of marine debris from land-based sources, the ongoing activities to address waste management in the context of GPA should be enhanced at the national and regional levels. At the regional level, the regional protocols on land-based sources should be fully and effectively implemented with respect to marine debris. Moreover, land-based sources of debris should be adequately taken into account when such protocols are being developed. At the national level, action should focus on the effective implementation of the GPA provisions relating to waste management. To ensure better implementation of GPA, cooperation with countries in need of assistance should be enhanced through financial, scientific and technological support, in developing and establishing environmentally sound waste-disposal methods and alternatives to disposal.

278. As regards the effects of marine debris on marine biodiversity, States should take into account this specific threat in implementing relevant instruments, such as the Convention on Biological Diversity, and in adopting policy decisions in that regard. The International Coral Reef Initiative (see para. 156 above) could also offer a forum for discussion of the issue.

279. Marine debris from all ships can not be effectively prevented or reduced without adequate port reception facilities. The fact that reception facilities for ship-generated waste, including solid waste and garbage, are lacking or inadequate in many ports and marinas worldwide is the major obstacle to the effective implementation and enforcement of MARPOL annex V and the entry into force of the Special Area requirements in several regions. States require technical assistance in order to be able to ensure the availability of adequate waste reception facilities in ports, including in marinas and fishing harbours. IMO has requested Governments to report their experiences with the aim of identifying problem areas and developing a future action plan (see para. 123). Where adequate facilities exist, it is important to ensure that fees do not act as a deterrent to the use of the facilities.

280. Measures to improve the enforcement of the relevant international instruments for the prevention and reduction of marine debris from sea-based activities include increasing surveillance of ships, in particular fishing boats and tourist and recreational vessels, imposing fines for illegal discharges or disposal which are high enough to act as a deterrent, and strengthening port State control.

281. Regarding fishing-generated marine debris, a number of measures have been proposed to minimize loss or abandonment of fishing gear and to facilitate its retrieval, including the use of global positioning systems in fishing gear to locate its position, mandatory marking of all fishing gear and mandatory reporting of lost fishing gear.[120] It has also been suggested that regional fisheries management organizations and arrangements should incorporate into their mandate and conservation measures a prohibition on discarding fishing gear and related debris and a requirement to maximize recovery of lost gear.[121]

282. To address the significant gaps in our knowledge about the global marine debris situation and the uneven geographical coverage of the available information, it is necessary to improve and consolidate the knowledge base on marine debris

through further research and monitoring activities. To this end, strategies for identifying the types, sources, amounts, interactions and key user groups need to be established, as well as strategies for assessment of the socio-economic aspects of marine debris. Monitoring mechanisms should be established where none exist and a limited number of basic marine indicators should be developed for use in all monitoring activities so that data and information about quantities and trends in marine debris are more coherent and compatible and enable the building of a common global basis for action. Global and regional assessments of the state of the coastal and marine environments should include marine debris as an issue of concern. The GPA Clearing-house node (Global Marine Litter Information Gateway), which was established to provide a global mechanism for the sharing of information about marine litter from land-based sources, could also be utilized to share information on all sources of marine debris based on information provided by relevant organizations.

283. Given its potential for causing transboundary pollution, marine debris is a global problem as well as a national one. There is no single solution to the problem and it must be addressed through a wide range of carefully targeted integrated measures. Therefore, the entities that are addressing the problem of marine debris in a variety of contexts should cooperate in order to ensure that the battle against marine debris is waged in a comprehensive and effective manner at the national, regional and global levels.

XI. The Indian Ocean tsunami disaster

284. On 26 December 2004, an earthquake of magnitude 9.3 on the Richter scale[227] off the island of Sumatra (Indonesia) generated a devastating tsunami, flooding vast expanses of coastal areas in countries all around the Indian Ocean rim from Indonesia to Somalia, including Sri Lanka, India, the Maldives, Thailand, Myanmar, Malaysia, Kenya, Madagascar, Seychelles and the United Republic of Tanzania. A tsunami ("wave in the port" in Japanese) is a series of large waves, which can reach vertical heights of 10 to 30 metres or more at the shoreline. It can be generated when the sea floor abruptly deforms and vertically displaces the overlying water as a result of an earthquake, submarine landslide or volcanic eruption. Subduction earthquakes (or tectonic earthquakes) are particularly effective in generating tsunamis and occur where denser oceanic plates slip under continental plates in a process known as subduction. These events generally occur around the crustal plate subduction zone known as the "ring of fire" in the Pacific Ocean. The devastating megathrust earthquake of 26 December 2004 was caused by the release of stresses that developed as the India plate subducted beneath the overriding Burma plate. Preliminary locations of larger aftershocks following the megathrust earthquake show that approximately 1200 km of the plate boundary slipped as a result of the earthquake.[228] This was confirmed in a recent survey by the *HMS Scott* conducted in the exclusive economic zone of Indonesia under the marine scientific research provisions of UNCLOS.[229]

A. Impact of the tsunami

285. It is estimated that the Indian Ocean tsunami took the lives of 273,770 people, displaced over 1.6 million and rendered over half a million homeless.[123] It eroded coastlines and caused extensive flooding. The affected countries suffered several billion dollars worth of damage to property, infrastructure, coastal environments and essential ecosystems. Vital ocean-related economic sectors, such as the fisheries and tourism, were severely impacted. Exports from these sectors alone represented over $30 billion of the annual earnings of the States concerned.[124]

286. The tsunami destroyed or seriously damaged fishing harbours and tens of thousands of fishing boats, resulted in the loss or damage of hundred thousands of fishing gear, the destruction of thousands of fish cages and fish ponds, and caused serious damage to aquaculture and fish processing plants. As a result, exports of fish and fish products from affected countries are expected to decline in the short term and local fish production is expected to be reduced by as much as 90 per cent, with implications for the food security of local populations.[125] For many people in coastal communities, fisheries are the only source of income and livelihood.

287. Maritime infrastructure, such as ports, navigational aids and global positioning system ground stations, was also damaged by the tsunami. For example, in the Strait of Malacca thousands of navigational aids, such as buoys held in place by mushroom-shaped anchors, were carried off to new locations by waves, thereby possibly sending out false positions.[126] The International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) and the International Hydrographic Organization (IHO) have begun the process of assessing in detail the extent of damage to ports and their approaches, navigational channels and navigational aids in the areas affected by the tsunami.

288. The high intensity of the tsunami and the wave of deposits and the debris it generated damaged coral reefs, seagrass beds, mangroves and associated ecosystems. In the case of coral reefs, some areas appear to have been severely damaged, while others were spared or should recover in the next 5 to 10 years.[126] Generally, most of the affected countries suffered varying degrees of similar tsunami-induced environmental problems. Tsunami-generated waste poses a risk to human health as well as to ecological functions. Coastal waters have been contaminated as a result of damage to sewage collection and treatment systems, as well as to industrial installations.

289. Post-tsunami environmental assessments revealed that coastal ecosystems, including coral reefs, mangrove forests and seagrass beds, acted as a natural buffer, at least partially protecting the coastline of some countries from destruction. Both in Thailand and in the Maldives the extensive reefs reduced the impact of the tsunami and losses were thus smaller compared to other areas. Unfortunately, the protective reefs, sand dunes and mangroves in many areas of the Indian Ocean have been destroyed by economic development, in particular tourism and aquaculture. As a result, many coastal communities found themselves with no such shields against the tsunami. Protection of the environment is essential for the protection of human life.

B. Responses to the tsunami disaster

290. In response to the huge loss of life and massive destruction caused by the Indian Ocean tsunami, the international community acted quickly to address the immediate humanitarian crisis, to establish an early warning system, and to initiate rehabilitation and reconstruction. Many States, international organizations, non-governmental organizations and private entities contributed or pledged their resources for humanitarian and disaster relief.[130]

1. Early warning systems

291. Early warning and preparedness play a critical role in preventing hazardous events from turning into disasters. Clear warnings received in time, coupled with the knowledge of how to react, can mean the difference between life and death, or between economic survival and ruin, for individuals and communities. In the case of the Indian Ocean tsunami, the initial underestimation of the magnitude of the earthquake prevented the issuance of a timely warning. The urgent need to establish early warning systems at the global and regional levels was emphasized in a number of global and regional forums, including the General Assembly.[131]

292. The special meeting of the Association of Southeast Asian Nations held in Indonesia on 6 January 2005, inter alia, called for the establishment of a regional tsunami early warning system for the Indian Ocean and the South-East Asia region. At the subsequent ministerial meeting on regional cooperation on tsunami early warning arrangements held in Bangkok on 29 January 2005, it was decided to take immediate and practical steps to enhance early warning capabilities in the Indian Ocean and South-East Asia and to cooperate towards the establishment of interim early warning arrangements and strengthening and upgrading of national systems, while moving towards a coordinated regional system. The ministerial meeting agreed that a regional early warning system should be developed, if possible by June 2006, within a United Nations international strategy coordinated by IOC.

293. The World Conference on Disaster Reduction, held in Kobe, Japan from 19 to 22 January 2005, adopted a common statement on the Indian Ocean disaster (A/CONF.206/6, annex II) that recognized the need to use the experience of the existing Pacific Ocean tsunami early warning systems, making use of the existing coordination mechanisms of IOC and other relevant international and regional organizations. However, the establishment of an interim Indian Ocean early warning system was also considered at the Conference. It would involve the Japanese Meteorological Agency and the IOC Pacific Tsunami Warning Centre[132] providing national authorities in the Indian Ocean region with information and warning arising from their monitoring activities.

294. It was also decided during the Conference to create an international early warning programme, if possible by June 2007, to cover not just the tsunami but all other threats such as storm surges and cyclones. In order to coordinate the many initiatives advanced by organizations and countries, IOC will host the international coordination meeting for the development of a tsunami warning and mitigation system for the Indian Ocean within a global framework in Paris from 3 to 8 March 2005. This meeting is expected to produce a draft work plan and timetable for a tsunami warning and mitigation system for the Indian Ocean and a draft design plan for a global tsunami warning system.

295. The need for early warning systems for natural hazards was also underscored at the meeting of small island developing States held in Mauritius in January 2005. Delegates agreed that early warning systems were vital and that reducing vulnerability required not only technology, such as telecommunications and sea-based buoys, but community-based initiatives involving education and training.

296. The establishment of a Caribbean tsunami early warning system was considered at an expert group meeting held in Barbados in February 2005. The group reviewed the existing monitoring networks within the region, examined data-sharing arrangements and devised a future programme of action. Working groups will determine the risk to coastal communities through tsunami flood mapping and design medium to long-term education and outreach programmes.

297. The vital importance of effective telecommunications systems for early warning systems and prevention of loss of life, and for the support of rescue and relief operations, has been underlined by the international community. IMO has proposed, inter alia, that the satellite and radio-based communications infrastructure that it established for the promulgation of maritime safety information could be used for the dissemination of tsunami warnings particularly to ships and fishing vessels. WMO will provide the use of its global telecommunication system for data collection and dissemination.

298. In order to ensure a better response to disasters, prevent the loss of life and help survivors, regulatory barriers that impeded the use of telecommunications resources for disasters have been waived with the entry into force on 8 January 2005 of the Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations.[133] Victims of disasters will now be able to benefit from faster and more effective rescue operations, since telecommunication is at the basis of the coordination of complicated rescue and relief operations.

299. Assistance that States have offered in support of early warning systems includes (a) help in building a United Nations database on disasters, (b) contributing new tsunami detecting buoys through the Global Earth Observation System of Systems, and (c) training disaster experts in developing countries. For example, a seminar launched by the International Strategy for Disaster Reduction was held in Japan from 22 to 24 February 2005 to provide to high-level administrative policy makers operational and technical information on how an early warning system can operate at the national level.[134]

2. Reconstruction and rehabilitation

300. While natural disasters affect all countries, they have a disproportionately greater impact on developing countries, including small island developing States. The crippling damage to the coastal zone and the various economic sectors and the environment caused by the Indian Ocean tsunami resulted in the loss by millions of people in the region not only of their homes and possessions, but also of the means to support their families. Therefore, economic revival and the generation of employment are among the pressing priorities once the need for emergency relief starts to ebb. Many States and organizations are supporting reconstruction and rehabilitation efforts in the affected areas.

Coastal zone planning and development

301. The important role of natural features such as coral reefs and mangroves in defending small islands and low-lying coastal areas from aggressive and destructive seas was underlined at the meeting of small island developing States held in Mauritius in January 2005. Governments agreed that more action should be taken to conserve these vital ecosystems by, for example, better assessing the impact of coastal developments. UNEP has underlined that the destruction caused by the tsunami to the environment offers an opportunity to rebuild in a manner that preserves natural resources for the benefit of the local communities that were hardest hit by the disaster.[115] A meeting on coastal zone rehabilitation management for the tsunami-affected region was held in Egypt in February 2005 to discuss basic principles for coastal reconstruction and rehabilitation within the broader framework of integrated coastal zone management and to provide information on related policy tools and mechanisms aiming to reduce the impacts of possible future disasters. A document containing key principles to guide the reconstruction of coastlines affected by the tsunami was introduced at the meeting.[116]

302. In Thailand, environmentalists and some tourist industry professionals are cautioning against unfettered construction on tsunami-hit beaches, advising instead strictly regulated construction so as to ease pressure on the environment and preserve the islands' environment. Officials and local authorities have indicated they would regulate beachfront development more stringently.[117]

Tourism

303. In the Maldives, whose economy largely depends on the tourism industry, the Government has established an "Adopt an Island" programme to try to persuade businesses to participate in the cost of rehabilitating and rehousing the 12,000 people displaced by the disaster.[118]

304. The World Tourism Organization has adopted the Phuket Action Plan to encourage tourists back to Thailand, Sri Lanka, the Maldives and Indonesia. The Plan focuses on saving jobs in the tourism industry, relaunching tourism-related businesses and increasing visitors' numbers. UNCTAD has pointed out that since the tsunami negatively affected employment and sustainable livelihoods, immediate trade measures should be focused on socio-economic recovery and include special measures to revive the tourism industry and infrastructure.[119]

Fisheries sector

305. FAO produced and intends to distribute an atlas on tsunami-damaged areas in Asia. It established a Special Fund for Emergency and Rehabilitation Activities which was instrumental in its being able to rapidly assist Governments and international financing institutions in assessing the damage and losses to agriculture and fisheries. Following its first assessment of the extensive damage to the fisheries sector of the riparian States of the Indian Ocean, FAO made a concerted effort to assist the marine capture fisheries and aquaculture of the affected countries through relief and rehabilitation measures. FAO intends to assist Indonesia, Maldives, Myanmar, Seychelles, Somalia, Sri Lanka and Thailand, according to their needs, in the repair and reconstruction of fishing infrastructure such as harbours and fish ponds, the repair and replacement of fishing vessels and gear, and the relief and

rehabilitation of affected fishing communities through activities like the provision of financial aid and training.

Maritime infrastructure

306. IMO has underlined the strategic importance of ensuring that ports, navigational aids and other key elements of the maritime infrastructure are in working order as soon as possible, both to facilitate the medium- and long-term recovery of the affected areas and to ensure that short-term aid can arrive by sea efficiently and in safety. It has developed a joint plan for future actions to be undertaken together with IALA and IHO. The three organizations, together with the World Meteorological Organization, will be focusing their attention principally on ensuring the integrity of the maritime navigational infrastructure to ensure the safe navigation of ships, including those carrying urgently needed relief supplies.[140]

Environment

307. The central role of a healthy environment in long-term disaster risk reduction was discussed at the World Conference on Disaster Reduction. The Hyogo Framework for Action 2005-2015 (A/CONF.206/L.2/Rev.1*) notes that disaster risk increases when hazards interact with, inter alia, environmental vulnerabilities. Consequently, in order to reduce the underlying risk factors, the environment and natural resources should be used and managed in a sustainable manner and fragile ecosystems (e.g. coral reefs) should be managed appropriately.

308. In the immediate aftermath of the tsunami, UNEP established the Asian Tsunami Disaster Task Force, which supports the national authorities of the affected countries and the United Nations in assessing and addressing the environmental impacts from the disaster, providing environmental expertise and mobilizing and coordinating international efforts in the environmental sector. The Task Force, inter alia, mobilizes immediate environmental assistance by integrating short-term environmental needs into the humanitarian flash appeal. It also aims at integrating environmental assessment and recovery in the reconstruction of affected areas. UNEP has also responded to requests from most of the affected countries for assistance in assessing the environmental damage, for example on coral reefs, and devising action plans to address the environmental issues identified and develop early warning capacity.

309. The UNEP World Conservation Monitoring Centre will provide remote sensing and geographic information system support in assessing impacts on biodiversity, in particular on coral reefs, shorelines and protected areas. UNEP will also facilitate and support the development of a waste management strategy and guidance materials, in particular to immediately address debris management.

310. Other organizations that are currently active in providing assistance to the affected countries include the International Union for the Conservation of Nature and Natural Resources. It established a high-level task force to develop responses to the devastating effects of the Indian Ocean tsunami, with an emphasis on damage assessment and rehabilitation of coastal environments.

XII. International cooperation and coordination

A. United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea

311. By its resolution 54/33, the General Assembly decided to establish an open-ended informal consultative process to facilitate the annual review by the Assembly, in an effective and constructive manner, of overall developments in ocean affairs and the law of the sea. By its resolution 57/141, the Assembly decided to continue the Consultative Process for a further period of three years. At its sixtieth session, the Assembly will review the effectiveness and utility of the Consultative Process. Pursuant to paragraph 3 (e) of resolution 54/33 and after consultations with Member States, by letter dated 10 December 2004, the President of the General Assembly reappointed Felipe H. Paolillo (Uruguay) and Philip Burgess (Australia) as co-chairpersons of the sixth meeting of the Consultative Process, to be held from 6 to 10 June 2005.

312. In accordance with General Assembly resolution 59/24, the sixth meeting of the Consultative Process will focus its discussions on fisheries and their contribution to sustainable development and on marine debris, as well as issues discussed at previous meetings.

B. Regular process for the global reporting and assessment of the state of the marine environment, including socio-economic aspects

313. The World Summit on Sustainable Development agreed in paragraph 36 (b) of the Johannesburg Plan of Implementation[34] to establish by 2004 a regular process under the United Nations for global reporting and assessment of the state of the marine environment, including socio-economic aspects, both current and foreseeable, building on existing regional assessments (the regular process). The General Assembly endorsed this proposal in resolution 57/141 and in resolution 58/240 requested the Secretary-General to organize a group of experts, an international workshop on the regular process and an intergovernmental meeting to formally establish the regular process. The international workshop held in June 2004 concluded that it appeared premature to hold the intergovernmental meeting in 2004 as mandated by the General Assembly (see A/59/126, para. 16).

314. During the debate on oceans and the law of the sea at the fifty-ninth session of the General Assembly, States reaffirmed the importance of establishing the regular process as a significant mechanism for increased research and collection of information for the protection of the marine environment and biodiversity. Although there was agreement on the need to focus on the start-up phase, and in particular the "assessment of assessments" (see A/AC.271/WP.1, paras. 8-11), it was also concluded that there was no consensus upon which to launch the preparatory phase of the process. Consequently, in paragraph 86 of its resolution 59/24, the General Assembly decided to convene a second international workshop to continue considering issues relating to the establishment of the process. This workshop will be held from 13 to 15 June 2005.

C. Oceans and Coastal Areas Network

315. The first meeting of the Oceans and Coastal Areas Network (UN-Oceans) was held in Paris at the headquarters of IOC from 25 to 26 January 2005. It was attended by representatives from the secretariat of the Convention on Biological Diversity, FAO, the International Atomic Energy Agency, IMO, IOC, the International Seabed Authority, the Department of Economic and Social Affairs and the Division for Ocean Affairs and the Law of the Sea, UNDP, the GPA Coordination Office, the World Meteorological Organization and the World Bank. Patricio Bernal of IOC was elected Coordinator of UN-Oceans and Anne Rogers, of the Department of Economic and Social Affairs, was elected Deputy Coordinator, both for two-year terms.

316. The objective of UN-Oceans is to enhance cooperation and coordination among the secretariats of the international organizations and bodies concerned with ocean-related activities, in particular by (a) coordinating and harmonizing the agencies' activities related to oceans; (b) reviewing programmes and activities and identifying issues needing to be addressed, with a view to updating and enriching the relationship between UNCLOS and Agenda 21; (c) ensuring integrated ocean management at the international level; and (d) undertaking joint activities to address emerging challenges and issues like global marine environmental assessment, regional ocean governance and the development of guidelines for the application of the ecosystem approach.

317. UN-Oceans is to operate as a flexible mechanism to review joint and overlapping ongoing activities and to support related deliberations at the Consultative Process. UN-Oceans plans to meet once a year in conjunction with Consultative Process meetings, and may hold special meetings when required. In order to minimize financial and human resource requirements, UN-Oceans will have a "distributed secretariat", with the Division for Ocean Affairs and the Law of the Sea as the "organizing secretariat" and IOC as the "implementing secretariat".

318. UN-Oceans will pursue time-bound initiatives, with well-defined terms of reference, through ad hoc task forces open to the participation of non-governmental organizations and other international stakeholders, as required. The task forces, coordinated by a lead institution with a mandate and major activities in the specific issues being considered, will foster collaboration around existing and future joint activities. The following four task forces were established: Task Force on Post-Tsunami Response (chaired by IOC), Task Force on the Regular Process (Division for Ocean Affairs and the Law of the Sea), Task Force on Biodiversity in Marine Areas beyond National Jurisdiction (secretariat of the Convention on Biological Diversity), and Task Force on the Second Intergovernmental Review of GPA (GPA Coordination Office). The next meeting of UN-Oceans will take place in conjunction with the Consultative Process, from 2 to 3 June 2005.

XIII. Conclusions

319. **The future of the oceans depends on enhanced scientific research into ocean processes, effective implementation of the international instruments that regulate various ocean activities and a comprehensive and integrated approach to ocean management. Yet, as the present report indicates, our oceans and seas**

are threatened by climate change, natural disasters, environmental degradation, depletion of fisheries, loss of biodiversity and ineffective flag State control. To address these threats and thereby achieve security and sustainability of the oceans, including the internationally agreed goals contained in the Millennium Declaration, it is suggested that a number of concerted actions be taken by the international community:

(a) As security depends on respect for and compliance with the rule of law, States should ratify and fully implement UNCLOS and other ocean-related instruments and strictly apply and enforce their provisions;

(b) As the lack of effective flag State control can pose a threat to the security and safety of navigation and the marine environment and lead to overexploitation of marine resources, States should be called upon to exercise effective control over their vessels and should not register vessels if they cannot exercise such control;

(c) States should be encouraged to take further measures to address the threat of climate change and associated effects, such as sea level rise and coral bleaching;

(d) To address continued degradation of the marine environment from land-based activities, States should increase their efforts to implement GPA;

(e) To deal with the persistent problem of marine debris, in addition to effectively implementing the relevant international instruments, States should foster environmentally sound waste management practices, ensure the availability of adequate reception facilities and take firm measures to deal with fisheries-related marine debris;

(f) To address the very serious issue of the depletion of fisheries, States should:

(i) Take urgent action and adopt innovative measures to eliminate overfishing and illegal, unregulated and unreported fishing;

(ii) Improve the legal and policy framework within which small-scale fisheries operate;

(iii) Provide financial and technical assistance to developing countries to improve governance of marine natural resources under their national jurisdiction;

(g) With respect to marine biodiversity, States should support work in various forums to prevent further destruction of marine ecosystems and associated losses of biodiversity, and be prepared to engage in discussions of the conservation and sustainable use of marine biodiversity in the ad hoc open-ended working group established by the General Assembly (see para. 149 above);

(h) To increase understanding of ocean processes and the marine environment, States should make a concerted effort to launch the initial phase of the regular process for global reporting and assessment of the state of the marine environment, including socio-economic aspects.

Notes

[1] For more information regarding the fourteenth session, see CLCS/42. For an overview of the first six years of work of the Commission, see A/59/62, paras. 83-109.

[2] Brazil delivered its submission on 17 May 2004; see A/59/62/Add.1, para. 19.

[3] With reference to the letter from the Deputy Permanent Representative of the United States of America, the Commission noted that, in accordance with annex II to the Convention and the rules of procedure, the Commission is required to consider communications from States other than the submitting one only in the case of disputes between States with opposite or adjacent coasts or in other cases of unresolved land or maritime disputes. Consequently, the Commission concluded that the content of the letter should not be taken into consideration by the subcommission.

After the fourteenth session, the Deputy Permanent Representative of the United States conveyed to the Legal Counsel the disappointment of her Government at the decision of the Commission. In particular, the United States asked the Commission to reconsider its conclusions, arguing that the rules of procedure require the Commission and subcommission to consider comments from other States regarding the data reflected in the executive summary, not only comments related to disputes between States with opposite or adjacent coasts or other disputes. This correspondence is available on the website maintained by the Division for Ocean Affairs and the Law of the Sea, at www.un.org/Depts/los/clcs_new/submissions_files/submission_bra.htm.

[4] In paragraph 31 of its resolution 59/24, the General Assembly requested the Secretary-General to submit to it at its sixtieth session proposals on how to ensure that the Commission could fulfil its functions under the Convention, taking into account the need for expanded facilities adequate to the projected workload of the Commission.

[5] The correspondence by the United States, the Russian Federation, Japan and Timor-Leste is available on the Division's website, at www.un.org/Depts/los/clcs_new/submissions_files/submission_aus.htm.

[6] *Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992* (United Nations publication, Sales No. E.93.I.8 and corrigenda), vol. I: *Resolutions adopted by the Conference*, resolution 1, annex II.

[7] UNCTAD/GDS/DMFAS/2003/1, p. 4, available at www.unctad.org/en/docs/gdsdmfas2003_en.pdf.

[8] Further information on the trust funds is available at www.un.org/Depts/los.

[9] Amendments were adopted to the International Code for the Application of Fire Test Procedures (resolution MSC.173(79)), the International Codes of Safety for High Speed Craft of 1994 and 2000 (resolutions MSC.174(79) and MSC.175(79)), the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (resolution MSC.176(79)), the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (resolution MSC.177(79)), the International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships (resolution MSC.178(79)) and the International Management Code for the Safe Operation of Ships and for Pollution Prevention (resolution MSC.179(79)).

[10] See resolutions MSC.181(79), MSC.182(79), MSC.183(79), MSC.184(79), MSC.185(79), MSC.186(79) and MSC.187(79).

[11] IMO document MSC 79/23, para. 4.12.

[12] International Chamber of Shipping/International Shipping Federation, *Marisec* 31, Winter 2005.

[13] See United States submission to the first session of the Joint IMO/ILO Ad Hoc Expert Working Group on the Fair Treatment of Seafarers in the Event of a Maritime Accident, IMO document IMO/ILO/WGFTS 1/6/3.

[14] Reports of the Conference can be consulted on the ILO website at www.ilo.org/public/english/standards/relm/maritime/

[15] Report V(1) is on the ILO website at www.ilo.org/public/english/standards/relm/ilc/ilc93/pdf/rep-v-1.pdf.

[16] Report of the Joint IMO/ILO Working Group on Fair Treatment of Seafarers, IMO document IMO/ILO/WGFTS 1/11.

[17] The 1996 edition of the Transport Regulations (as amended in 2003) was published in 2004. Further review of these regulations resulted in approval by the Board of Governors for publication of the 2005 edition. Changes approved for this 2005 edition will be included in the 2005 edition of the United Nations Model Regulations and will then be incorporated in the 2007 editions of international air, sea, road and rail regulations, to become effective 1 January 2007.

[18] The text of the action plans and the IAEA resolution can be found on the IAEA website at www.iaea.org.

[19] An overview of the modernized IAEA nuclear liability regime, i.e., the 1997 Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage and the Convention on Supplementary Compensation for Nuclear Damage, is provided in IAEA document GOV/INF/2004/9-GC(48)/INF/5, available at www.iaea.org/About/Policy/GC/GC48/Documents/gc48inf-5.pdf. The explanatory texts are available at www.iaea.org/About/Policy/GC/GC48/Documents/gc48inf-5explanatorytexts.pdf.

[20] Information provided by the secretariat of the Pacific Community.

[21] Communique of the thirty-fifth Pacific Islands Forum, Apia, Samoa, 5-7 August 2004. See press statement 56-04 of the Pacific Islands Forum secretariat at www.forumsec.org.fj/docs/Communique%202004%20Communique.pdf.

[22] The Mauritius Strategy was adopted on 14 January 2005 at the International Meeting to Review the Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States and is contained in draft form in document A/CONF.207/CRP.7.

[23] It has not been decided yet whether the code will cover only mandatory instruments.

[24] Opening address by the Secretary-General of IMO at the seventy-ninth session of MSC, IMO document MSC 79/23, p. 9.

[25] Guidance relating to the implementation of SOLAS Chapter XI-2 and the ISPS Code (MSC/Circ.1132); interim guidance on voluntary self-assessment by SOLAS Contracting Governments and by port facilities (MSC/Circ.1131), which includes a self-assessment questionnaire to assist SOLAS Contracting Governments in the implementation of, and the maintenance of compliance with, the requirements of SOLAS Chapter XI-2 and the ISPS Code. Reminder of the obligation to notify flag States when exercising control and compliance measures (MSC/Circ.1133); and a revised circular on false security alters and distress/security double alerts (MSC/Circ.1109/Rev.1).

[26] See Special press summary "Australia's maritime identification zone", 21 December 2004, prepared by the Pacific Virtual Information Center, at www.vic-info.org. The summary includes the press release of the Australian Prime Minister's announcement of the zone.

[27] See IMO document LEG 89/16, and the report of the working group in LEG/SUA/WG.2/4.

[28] International Maritime Bureau, *Annual report of incidents of piracy and armed robbery against ships* (2004).

[29] Report by the National Union of Marine, Aviation and Shipping Transport Officers (NUMAST), providing the seafarers' perspective of the unacceptable threat to merchant shipping and how

seafarers perceive the problem could be best addressed, available on NUMAST website at www.numast.org.

[40] The Government of Japan expects that this agreement will strengthen the anti-piracy activities in Asia, especially in the Malacca and Singapore Straits, and become a leading model of regional cooperation in Asia (Ministry of Foreign Affairs of Japan, press conference 12 November 2004, at www.mofa.go.jp/announce/press/2004/11/1112.html).

[41] See "United Nations launch container control programme against illicit trafficking", press release UNIS/NAR/863 of 21 October 2004, at www.unis.unvienna.org/unis/pressrels/2004/unisnar863.html. An electronic link is provided to a PowerPoint presentation on the Container Control Programme.

[42] United Nations Environment Programme, *Global Environment Outlook 3* (Earthscan Publications, 2002).

[43] The Global Programme of Action was adopted by an intergovernmental conference held in Washington, D.C., in October and November 1995. The text is contained in document A/51/116, annex II.

[44] *Report of the World Summit on Sustainable Development, Johannesburg, South Africa, 26 August-4 September 2002* (United Nations publication, Sales No. E.03.II.A.1 and corrigendum), chap. I, resolution 2, annex.

[45] See GPA website at www.gpa.unep.org/pollute/sewage.htm.

[46] Proceedings of the UNEP Governing Council/Global Ministerial Environment Forum at its eighth special session, held in Jeju, Republic of Korea, from 29 to 31 March 2004, UNEP document UNEP/GCSS.VIII/8, annex II. The Jeju initiative, prepared by the Chair and moderators of the UNEP Governing Council/Global Ministerial Environment Forum at its Eighth Special Session, is a summary of the rich and interactive discussion on the part of the ministers and other heads of delegations attending the meeting, rather than a consensus view on all points.

[47] The Strategic Action Plan on Municipal Wastewater was developed by UNEP, the World Health Organization, the United Nations Human Settlements Programme and the Water Supply and Sanitation Collaborative Council; text at www.gpa.unep.org/pollute/documents/SAP/SAP%20Wastewater.pdf.

[48] Suggested actions to be undertaken at the national, regional and global levels can be found on the GPA Coordination Office website at www.fao.org/gpa/nutrients/nutintro.htm.

[49] The key principles developed under the project for each of these sectors are presented on the GPA Coordination Office website at http://padh.gpa.unep.org.

[50] A GPA report on this subject can be found at http://www.gpa.unep.org/pollute/documents/SAP/WET/UNEP%20WS%20Targets%20RS%20section5.doc.

[51] The guidelines, contained in resolution MEPC.120(52), will take effect on 1 January 2007.

[52] Other areas designated as Particularly Sensitive Sea Areas are the Great Barrier Reef, Australia (1990); the Sabana-Camagüey Archipelago, Cuba (1997); Malpelo Island, Colombia (2002); around the Florida Keys, United States (2002); the Wadden Sea, Denmark, Germany, Netherlands (2002); and Paracas National Reserve, Peru (2003). MEPC has approved in principle the Torres Strait (Australia and Papua New Guinea), the Baltic Sea (except Russian waters), waters of the Canary Isles (Spain) and the Galapagos Archipelago (Ecuador).

[53] The review of the Guidelines is based on a proposal by the United States (MEPC 52/8). Other submissions contained in documents MEPC 52/8/1, MEPC 52/8/2, MEPC 52/8/3 and MEPC 52/8/4 are taken into account, as well as the discussions and direction given in MEPC 52/24, paras. 8.14-8.34 and annex 15.

[54] For information on the Convention see A/59/62, paras. 179-181.

[47] See report of the twenty-sixth consultative meeting of Contracting Parties to the London Convention, IMO document LC 26/15.

[48] European Commission, Directorate-General Energy and Transport, *Oil Tanker Phase Out and the Ship Scrapping Industry: A study on the implications of the accelerated phase out scheme of single hull tankers proposed by the EU for the world ship scrapping and recycling industry*, June 2004, p. 11.

[49] United Nations, *Treaty Series*, vol. 1673, p. 57.

[50] It is estimated that approximately 2,000 single-hull oil tankers will be scrapped in the next five years. European Commission, Directorate-General Energy and Transport, supra note 46.

[51] *Impacts of a Warming Arctic: Arctic Climate Impact Assessment*, Cambridge University Press, November 2004.

[52] European Environment Agency, *Arctic environment: European perspectives*, 2nd edition, 2004. G. Matishov and others, *Barents Sea, Global International Waters Assessment Regional assessment 11*, University of Kalmar, Kalmar, Sweden, August 2004; UNEP, Global Environmental Outlook 3, Fact sheet: the Polar regions, available from www.unep.org/GEO/.

[53] Reykjavik Declaration, available at www.arctic-council.org/en/main/messageslistpage/1.

[54] See A. Atkinson and others, "Long term decline in krill stock and increase in salps within the Southern Ocean", *Nature*, vol. 432, 4 November 2004, pp. 100-103.

[55] On the Antarctic Peninsula, the speeds at which several glaciers are surging into the sea have increased eight-fold between 2000 and 2003. See "Antarctica, warming, looks ever more vulnerable", *The New York Times*, 25 January 2005.

[56] "Grass flourishes in warmer Antarctic", *The Sunday Times* (London), 26 December 2004.

[57] See UNEP/CBD/COP/7/21, annex, decision VII/5. For a summary of the Elaborated Programme of Work on Marine and Coastal Biological Diversity, see A/59/62, para. 228.

[58] See UNEP/CBD/SBSTTA/10/8 and Add.1 and UNEP/CBD/SBSTTA/10/INF/9.

[59] Report of the meeting not yet available.

[60] Notification to the Parties No. 2004/073, Geneva, 19 November 2004.

[61] See press release at http://www.cites.org/eng/news/press/2004/041014_cop13final.shtml.

[62] Okinawa Declaration on Conservation and Restoration of Endangered Coral Reefs of the World, Tenth International Coral Reef Symposium (28 June to 2 July 2004, Okinawa, Japan). The Declaration recommends four key strategies: (a) achieve sustainable fishery on coral reefs; (b) increase effective marine protected areas on coral reefs; (c) ameliorate land-use change impacts; and (d) develop technology for coral reef restoration.

[63] *Status of Coral Reefs of the World: 2004*, vols. 1 and 2, edited by Clive Wilkinson.

[64] A. Freiwald and others, *Cold-water coral reefs: out of sight — no longer out of mind*, UNEP-World Conservation Monitoring Centre, Cambridge, United Kingdom, 2004.

[65] www.iwcoffice.org/_documents/sci_com/SCRepFiles2004/56SCrep.pdf.

[66] Bulletin of the European Union 10-2004, Environment (14/17).

[67] Resolution 3.52 of the third World Conservation Congress.

[68] Mauritius Strategy, supra note 22, para. 19.

[69] This section makes use of contributions from FAO, GEF, UNEP, the Baltic Marine Environment Protection Commission, the United Nations University, the Northwest Atlantic Fisheries Organization, the Pacific Community, the Committee for the Eastern Central Atlantic Fisheries and the Commonwealth secretariat.

[64] *Our common future: The World Commission on Environment and Development* (Oxford University Press, 1987), p. 43.

[65] FAO Committee on Fisheries, cited in FAO Fisheries Technical Paper 353, *Living marine resources and their sustainable development — Some environmental and institutional perspectives* (FAO, Rome, 1995), p. 1.

[66] See Department for International Development (DFID), Background Briefing, *Socially Sustainable Development: Concepts and Cases*, August 2002, available at www.dfid.gov.uk/pubs/files/wssd-brief-sdd-concepts.pdf.

[67] See *Report of the FAO World Conference on Fisheries Management and Development, Rome 27 June-6 July 1984* (FAO, Rome, 1984).

[68] Much of this section is drawn from *Strategies for increasing the contribution of small-scale capture fisheries to food security and poverty alleviation*, FAO Committee on Fisheries, twenty-fifth session, Rome, 24–28 February 2003, document COFI/2003/9.

[69] FAO, Fisheries Department, *The State of World Fisheries and Aquaculture: 2002* (FAO, Rome, 2002), pp. 15 and 16.

[70] *Rome Declaration on World Food Security and World Food Summit Plan of Action* (FAO, 1998), para. 7.

[71] FAO, *Fisheries and economic development* at www.oceansatlas.com/worldfisheriesandaquaculture/html/issues/sustain/fecond.

[72] International Centre for Trade and Sustainable Development, Natural Resources, International Trade and Sustainable Development Series No. 1, *Fish for thought — fisheries, international trade and sustainable development*.

[73] FAO, *Contribution of fisheries to food security*, at www.oceansatlas.com/worldfisheriesandaquaculture.html.

[74] *The State of World Fisheries and Aquaculture, 2002*, supra note 75, p. 34.

[75] Ibid., pp. 34 and 39.

[76] The precautionary approach is a recognition of the fact that because uncertainty affects all elements of the fishery management system in varying degrees, the use of precaution is required at all levels of the system, including development planning, conservation measures, management decisions, research, technology development as well as legal and institutional frameworks (Contribution of the Northwest Atlantic Fisheries Organization).

[77] FAO Fisheries Circular No. 985, *Summary information on the role of international fishery organizations or arrangements and other bodies concerned with the conservation and management of living aquatic resources* (FAO, Rome, 2003), pp. 6–7.

[78] This section is drawn in part from *Strategies for increasing the contribution of small-scale capture fisheries to food security and poverty alleviation*, supra note 72.

[79] Information provided by the South Pacific Applied Geoscience Commission.

[80] Agenda 21, supra note 6, para. 17.45.

[81] E. Franckx, *Pacta Tertiis and the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to Conservation and Management of Straddling Fish Stocks & Highly Migratory Fish Stocks*, FAO Legal Papers on Line No. 8, June 2000, p. 7.

[82] Agenda 21, supra note 6, para. 17.72.

[83] *The State of World Fisheries and Aquaculture, 2002*, supra note 73, pp. 22-23.

[84] Ibid.

[87] *Strategies for increasing the contribution of small-scale capture fisheries to food security and poverty alleviation*, supra note 72, para. 20.

[88] Ibid., para. 21.

[89] FAO Fisheries Technical Paper 353, supra note 69, p. 16.

[90] FAO Fisheries Technical Paper 228, *Management concepts for small-scale fisheries: economic and social aspects* (FAO, Rome, 1982), p. 25.

[91] Ibid., p. 22.

[92] R. B. Pollnac and J. Sutinen, "Economic, social, and cultural aspects of stock assessment for tropical small-scale fisheries" in *Stock Assessment for Tropical Small-scale Fisheries*, ed. by S. B. Saila and P. M. Roedel (University of Rhode Island, International Center for Marine Research and Development, Kingston, Rhode Island), pp. 48-50; see also FAO Fisheries Technical Paper 228, supra note 92, p. 30.

[93] M. J. Kaiser and others, "Impacts of fishing gear on marine benthic habitats" in *Responsible Fisheries in the Marine Ecosystem*, ed. by M. Sinclair (FAO, Rome, 2003), p. 201.

[94] FAO Fisheries Technical Paper 443, *The ecosystem approach to fisheries — issues, terminology, principles, institutional foundations, implementation and outlook*, (FAO, Rome, 2003), p. 11.

[95] *The State of World Fisheries and Aquaculture, 2002*, supra note 73, pp. 74-83; see also FAO Fisheries Circular 989 (FIRI/C989), *Genetically modified organisms and aquaculture* (FAO, Rome, 2003), pp. 19-22, and *Financial Times*, 12 January 2004.

[96] UNEP(DEC)/RS.6/1/INF.9, available at www1.unep.org/dec/RegionalSeas/INF.9MarineLitterFeasibilityStudy.doc.

[97] Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP) Reports and Studies 71, *Protecting the oceans from land-based activities* (available at http://gesamp.imo.org/no71/index.htm), pp. 15-26.

[98] Ibid.

[99] See General Assembly resolutions 59/24, para. 92; 59/25, para. 60; 58/14, para. 44; 57/142, para. 23; and 55/8, para. 20.

[100] Seba B. Sheavly, "Marine debris — an overview of a critical issue for our oceans", paper presented at the 2004 International Coastal Cleanup Conference, 14-18 May 2004, San Juan, Puerto Rico, available from www.coastalweep.umb.edu.

[101] www.noaanews.noaa.gov/stories2005/s2362.htm.

[102] www.ukmarinesac.org.uk.

[103] The lack of on-shore storing and disposal facilities has been cited as one of the reasons why fishers purposefully discard damaged gear. See Proceedings of the Fourth International Marine Debris Conference on Derelict Fishing Gear and the Marine Environment, Honolulu, Hawaii, 2000 (available through http://hawaiihumpbackwhale.noaa.gov), p. 27.

[104] Ibid., p. 31.

[105] Ibid., p. 21.

[106] Sheavly, supra note 161.

[107] *Marine Debris Abatement* on website of United States Environmental Protection Agency at www.epa.gov/owow/oceans/debris.

[108] Ibid.

[109] Information from www.oceansatlas.org.

[110] Sheavly, supra note 161.

[111] T. Fanshawe and M. Everard, *The Impacts of Marine Litter*, Marine Pollution Monitoring Management Group, 2002, p. 13.

[112] A determination as to whether the legal regime for vessels or that relating to artificial islands, installations or structures applies to mobile offshore craft such as floating production, storage and offloading units, is dependent on a number of factors: the type of unit involved, (whether it is self-propelled or not); its mode of operation (whether or not it is on station and whether it is engaged in exploration and exploitation of the seabed); and the kind of activity being regulated.

[113] For example, article 8, on in situ conservation, calls for States to promote the protection of ecosystems and natural habitats and the maintenance of viable populations of species in natural surroundings; to rehabilitate and restore degraded ecosystems and promote the recovery of threatened species; and to prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species.

[114] For relevant decisions of the Conference of the Parties to the Convention at its seventh meeting, see UNEP/CBD/COP/7/21, annex.

[115] See www.fao.org/fi/agreem/codecond/codecon.asp.

[116] See the Baltic Strategy for Port Reception Facilities for Ship-generated Wastes and Associated Issues, at www.helcom.fi/stc/files/Publications/Proceedings/bsepg2.pdf.

[117] Fact sheet on marine debris of the Humane Society International, Australia, at www.hsi.org.au/news_library_events/fact_sheets/F0053.htm.

[118] See *Recommendations for the marking of fishing gear*, Supplement to the Report of the Expert Consultation on the Marking of Fishing Gear, Victoria, British Colombia, Canada, 14-19 July 1991, ISBN 92-5-103330-7.

[119] Proceedings of the Fourth International Marine Debris Conference, supra note 105, p. 216.

[120] "Dr. Seth Stein on tsunami earthquake" at www.northwestern.edu/univ-relations/broadcast/2005/02/tsunami.html; *The New York Times*, 8 February 2005.

[121] United States Geological Survey website http://earthquake.usgs.gov.

[122] As reported in *Landslides seen on Indian Ocean seafloor near earthquake*, Environment News Service, 11 February 2005. *HMS Scott* is a UK deep-water hydrographic survey vessel which started collecting images of the Indian Ocean seafloor near the epicentre of the earthquake in January 2005.

[123] International Federation of Red Cross and Red Crescent Societies at www.ifrc.org/cgi/pdfappeals.pl?04/280449.pdf.

[124] United Nations press release IHA/995-TAD/2006, 18 January 2005.

[125] Information provided by FAO, at www.fao.org/newsroom/en/news/2005/88321/index.html.

[126] The National Maritime portal at portsworld.com.

[127] "Powerful tsunami's impact on coral reefs was hit and miss", *Science*, vol. 307, 4 February 2005.

[128] The United Nations Indian Ocean Tsunami/Earthquake Flash Appeal was launched on 6 January 2005. The appeal focuses on supporting people in Indonesia, Maldives, Myanmar, Seychelles, Somalia and Sri Lanka from January to the end of June 2005. As of 22 February 2005, $6.3 billion was pledged by States, regional organizations including development banks, non-governmental organizations and other private entities.

[129] In its resolution 59/279, the General Assembly recognized the pressing need to develop and promote national and regional capacity and access to technology and knowledge in building and managing a regional early warning system and in disaster management, through national and regional efforts as well as through international cooperation and partnership.

[132] The Pacific Tsunami Warning Center provides warnings for Pacific basin telctsunamis (tsunamis that can cause damage far away from their source) to almost every country around the Pacific rim and to most of the Pacific island States. This function is carried out under the guidance of the UNESCO/IOC International Coordination Group for the Tsunami Warning System in the Pacific (ICG/ITSU). The ICG/ITSU was formed in 1968 and is a subsidiary body of the IOC/UNESCO. Its purpose is to recommend and coordinate programmes most beneficial to countries belonging to the IOC, whose coastal areas are threatened by tsunamis. The IOC also maintains the International Tsunami Information Centre (ITIC) to assist in the work of the ICG/ITSU, and the identification of improvements to the international tsunami warning system currently operated by the Pacific Tsunami Warning Center. For information about the Deep-ocean Assessment and Reporting of Tsunamis project, see http://www.pmel.noaa.gov/tsunami/Dart

[133] See United Nations press release IHA/983 of 7 January 2005.

[134] See United Nations press release IHA/1017 of 18 February 2005.

[135] See UNEP report "After the tsunami: rapid environmental assessment", available at www.unep.org.

[136] See www.gpa.unep.org/documents/Key_PrinciplesFINAL.doc.

[137] Amy Kazmin, "Disaster brings chance to regain paradise", *The Financial Times*, 25 January 2005.

[138] Edward Luce, "Tsunami disaster: Maldives up for adoption", *The Financial Times*, 8 February 2005.

[139] Ibid.

[140] IMO document COMSAR 9/3/1, *IMO, IHO and IALA meet to coordinate tsunami responses*, IMO press briefing 12 January 2005, and *IMO to help coordinate restoration of key maritime infrastructure in tsunami aftermath*, IMO press brief... g. 5 January 2005, at www.imo.org.